

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4165320

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
CONVEYING PARTY DATA	
Name	Execution Date
KAZUOMI TACHIGI	11/07/2016
KANJI KUROIWA	11/07/2016
HIROSHI NAKAMURA	11/07/2016
RECEIVING PARTY DATA	
Name:	JVC KENWOOD CORPORATION
Street Address:	3-12, MORIYACHO, KANAGAWA-KU
City:	YOKOHAMA-SHI, KANAGAWA
State/Country:	JAPAN
Postal Code:	221-0022
PROPERTY NUMBERS Total: 1	
Property Type	Number
Application Number:	15366261
CORRESPONDENCE DATA	
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Address Line 4:	CLEVELAND, OHIO 44114
ATTORNEY DOCKET NUMBER:	SAJVP127US
NAME OF SUBMITTER:	GREGORY TUROCY
SIGNATURE:	/Greg Turocy/
DATE SIGNED:	12/01/2016
This document serves as an Oath/Declaration (37 CFR 1.63).	
Total Attachments: 2	
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source=DEC127#page2.tif	

Docket No.

Amin, Turocy & Watson, LLP

**COMBINED DECLARATION AND ASSIGNMENT FOR U.S. PATENT
APPLICATION USING AN APPLICATION DATA SHEET**

DECLARATION

As a below named inventor, I hereby declare that:

I believe I am the original inventor or an original joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: RECEIVING APPARATUS AND CONTROL METHOD

the application of which is attached hereto unless the following is checked

_____ was filed on _____ as United States application Serial No. _____, or
as described and claimed in PCT International Application No. _____ filed
on _____ and amended on _____ (if any).

The above-identified application was made or authorized to be made by me.

Please direct all communications to the following address:

the address associated with Customer Number **23623**, and direct telephone calls to

Gregory Turocy of Amin, Turocy & Watson, LLP at 216-696-8730.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. Section 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

For good and valuable consideration received of the hereinafter named assignee, receipt of which is hereby acknowledged, the undersigned

First Inventor's Name: Kazuomi TACHIGI

Residence: Yokohama-shi, Kanagawa, Japan

Second Inventor's Name: Kanji KUROIWA

Residence: Yokohama-shi, Kanagawa, Japan

Third Inventor's Name: Hiroshi NAKAMURA

Residence: Yokohama-shi, Kanagawa, Japan

hereby sell and assign to JVC KENWOOD Corporation, a corporation of Japan, having a business address at 3-12, Moriyacho, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0022 Japan, its successors and assigns, the entire right, title and interest, so far as concerns the United States and the Territories and Possessions thereof and all foreign countries, in and to the inventions titled above for which application for United States Letters Patent is executed by the undersigned on the date below and is being filed concurrently herewith, said application for United States Letters Patent, any and all other applications for Letters Patent on said inventions in countries foreign to the United

Docket No.

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States, including all divisional, renewal, substitute, continuation, Convention applications, reissue, reexamination, supplemental examination, inter parties review, post grant review, or other procedures thereof for the full term or terms for which the same may be granted based in whole or in part upon said inventions or upon said applications, and any and all Letters Patent and reissues and extensions of Letters Patent granted for said inventions or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said applications and said Letters Patent; said assignee being hereby authorized to file patent applications in any or all countries on any or all said inventions in the name of the undersigned or in the name of said assignee or otherwise as said assignee may deem advisable, under the International Convention or otherwise; the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments being hereby authorized to issue or transfer all said Letters Patent to said assignee in accordance herewith; this assignment being under covenant, not only that full power to make the same is had by the undersigned, but also that such assigned right is not encumbered by any grant, license, or other right heretofore given, and that the undersigned will do all acts reasonably serving to assure that said inventions, patent applications and Letters Patent shall be held and enjoyed by said assignee as fully and entirely as the same could have been held and enjoyed by the undersigned if this assignment had not been made, and particularly to execute and deliver to said assignee all lawful documents including petitions, specifications, oaths, assignments, invention disclaimers, and lawful affidavits in form and substance which may be requested by said assignee, to furnish said assignee with all facts relating to said inventions or the history thereof and any and all documents, photographs, models, samples or other physical exhibits which may be useful for establishing the facts of conception, disclosure and reduction to practice of said inventions, and to testify in any proceedings relating to said inventions, patent applications and Letters Patent.

The undersigned hereby appoint, request, and grant power to the following law firm to insert on this Assignment further identification which may be necessary or desirable in order to comply with the Rules of the U.S. Patent and Trademark Office for recordation of this document, for example, the U.S. Serial No. and filing date.

Amin, Turocy & Watson, LLP, 57th Floor - Key Tower, 127 Public Square, Cleveland, Ohio 44114.

Legal name of inventor: Kazuomi TACHIGI

Inventor's signature: Kazuomi Tachigi Date: 11/07/2016

Legal name of inventor: Kanji KUROIWA

Inventor's signature: Kanji Kuroiwa Date: 11/07/2016

Legal name of inventor: Hiroshi NAKAMURA

Inventor's signature: Hiroshi Nakamura Date: 11/07/2016

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出願人による委任状
POWER OF ATTORNEY BY APPLICANT

私はここに、添付の伝送書もしくは下記枠内で特定された出願に対して、現時点より前に与えられたすべての委任状を破棄します。
I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

出願番号 Application Number	出願日 Filing Date

(注記: PTO/AIA/82Aに同じ情報が明記されている場合、上の枠内は空欄でも可)
(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☒ 私は、下記顧客番号に関連する特許弁護士を、当方の弁護士あるいは代理人に指名し、添付の伝送書 (PTO/AIA/82A) 内もしくは上記に記載の特許出願に関連した米国特許商標庁との業務の全てを同弁護士あるいは代理人に委任します。

I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

23623

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OR

☐ 私は、添付のリスト (PTO/AIA/82C) に記載の特許弁護士を、当方の弁護士あるいは代理人に指名し、添付の伝送書 (PTO/AIA/82A) 内もしくは上記に記載の特許出願に関連した米国特許商標庁との業務の全てを同弁護士あるいは代理人に委任します。(注記: PTO/AIA/82C を記入すること。)

I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

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又は
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This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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出願人による委任状 POWER OF ATTORNEY BY APPLICANT

私は出願人であり（出願人が法人の場合、出願人名を下記枠内に記入）：

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

JVC KENWOOD Corporation

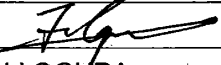
- ☐ 発明者もしくは共同発明者である（下記役職の明記は不要）
Inventor or Joint Inventor (title not required below)
- ☐ 死亡したもしくは成年被後見人である発明者の法定代理人である（下記役職の明記は不要）
Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ 被譲渡人もしくは発明者が譲渡する義務を負う人物である
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Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

特許出願人の署名

SIGNATURE of Applicant for Patent

下記署名者（役職は下記に記載）は出願人の代理人と認められている（出願人が法人の場合等）

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

署名 Signature		署名日（任意） Date (Optional)	Dec. 21, 2015
氏名 Name	Junichi OGURA		
役職 Title	Senior Manager, Intellectual Property Department		

注記：署名 - 本書類は37 CFR 1.33に基づき署名されなければならない。署名の要件および証明に関しては37 CFR 1.4を参照。出願人が複数いる場合は、複数の書類を使うこと。

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☒ 提出書類 計 1 枚。
Total of 1 forms are submitted.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	2016-12-01
	First Named Inventor	Tachigi et al
	Art Unit	
	Examiner Name	
	Attorney Docket Number	SAJVP127US

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	1	09-130173	JP		1997-05-16	SONY CORP		
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2016-12-01
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		2016-12-01
	First Named Inventor	Tachigi et al	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	SAJVP127US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Greg Turocy/	Date (YYYY-MM-DD)	2016-12-01
Name/Print	Gregory Turocy	Registration Number	36952

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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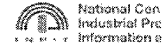
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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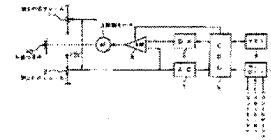
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(43)Date of publication of application	16.05.1997
(51)Int.Cl.	H036 3/02
(21)Application number	07-286083
(22)Date of filing	02.11.1995
(71)Applicant	SONY CORP
(72)Inventor	HANAJIMA MITSURU YOKOTA KOJI



(54)METHOD AND DEVICE FOR PREVENTING VOLUME ERRONEOUS OPERATION

(57)Abstract

PROBLEM TO BE SOLVED: To prevent erroneous operation by automatically returning an erroneously operated volume to its original state.

SOLUTION: A second volume 2 interlocking with a first volume 1 is provided for the first volume 1 which adjusts the signal level. For example, +5V DC is applied to one end of the volume 2, and the other end of the volume 2 is grounded. A driving motor 3 which simultaneously drives first and second volumes 1 and 2 is provided. A central processing unit(CPU) 4 is provided, and the output value from the CPU 4 is supplied to a comparator 6 through a D/A converter 5. The output voltage from the slider of the volume 2 is supplied to the comparator 6, and the comparison output from this comparator 6 is supplied to the driving motor 3. The output voltage from the slider of the volume 2 is supplied to the CPU 4 through an A/D converter 7. The value supplied to the CPU 4 is stored in a memory 8 in accordance with the indication from a keyboard 9.

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(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平9-130173

(43) 公開日 平成9年(1997)5月16日

(51) Int.Cl.⁶
H 0 3 G 3/02

識別記号 庁内整理番号

F I
H 0 3 G 3/02技術表示箇所
A

審査請求 未請求 請求項の数 4 O L (全 6 頁)

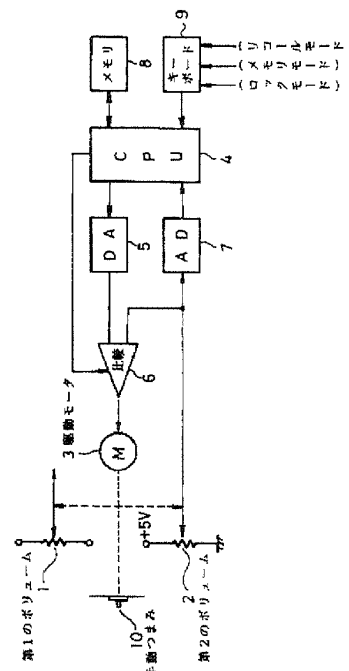
(21) 出願番号 特願平7-286083
(22) 出願日 平成7年(1995)11月2日(71) 出願人 000002185
ソニー株式会社
東京都品川区北品川6丁目7番35号
(72) 発明者 花島 満
東京都品川区北品川6丁目7番35号 ソニー株式会社内
(72) 発明者 横田 浩嗣
東京都品川区北品川6丁目7番35号 ソニー株式会社内
(74) 代理人 弁理士 松隈 秀盛

(54) 【発明の名称】 ボリューム誤操作防止方法及び装置

(57) 【要約】

【課題】 誤って動かされたボリュームを自動復帰させ、誤操作を防止する。

【解決手段】 信号のレベルを調整する第1のボリューム1に対して、これと連動する第2のボリューム2が設けられる。またボリューム2の一端には例えば+5Vの直流が印加され、このボリューム2の他端が接地される。さらにこれらの第1及び第2のボリューム1、2を同時に摺動する駆動モータ3が設けられる。また中央処理装置(CPU)4が設けられ、このCPU4からの出力値がD/A変換器5を通じて比較器6に供給される。さらにボリューム2の摺動子からの出力電圧が比較器6に供給され、この比較器6からの比較出力が駆動モータ3に供給される。またボリューム2の摺動子からの出力電圧がA/D変換器7を通じてCPU4に供給される。そしてキーボード9からの指示に従ってCPU4に供給された値がメモリ8に記憶される。



【特許請求の範囲】

【請求項1】 ボリュームをモータ駆動にて操作できるようにすると共に、

上記ボリュームの摺動位置に応じた値を検出し、任意の時点の上記摺動位置に応じた値を記憶し、この記憶された値と上記検出された値とが一致するように上記モータ駆動を行って、誤って動かされた上記ボリュームを上記任意の時点の上記摺動位置に自動復帰させることを特徴とするボリューム誤操作防止方法。

【請求項2】 信号を調整する第1のボリュームと連動する第2のボリュームが設けられ、

これらの第1及び第2のボリュームをモータにて同時に摺動する構成を設けると共に、任意の時点の上記第2のボリュームの摺動位置に応じた出力を記憶する記憶手段を有し、この記憶手段に記憶された値と上記第2のボリュームの出力とが一致するように上記モータを駆動して、誤って動かされた上記ボリュームを上記任意の時点の上記摺動位置に自動復帰させることを特徴とするボリューム誤操作防止装置。

【請求項3】 請求項2記載のボリューム誤操作防止装置において、

上記記憶手段に記憶された値と上記第2のボリュームの出力との差の値に応じて上記信号を信号レベル調整手段で調整すると共に、上記モータの駆動に応じて上記信号レベル調整手段での調整レベルを減じさせることを特徴とするボリューム誤操作防止装置。

【請求項4】 請求項2記載のボリューム誤操作防止装置において、

上記記憶手段に記憶された値と上記第2のボリュームの出力とが不一致となったときに警報を発生させることを特徴とするボリューム誤操作防止装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、例えば業務用のホール等で用いられる音響システム等に使用して好適なボリューム誤操作防止方法及び装置に関するものである。

【0002】

【従来の技術】例えば業務用のホール等で用いられる音響システム等においては、複数のスピーカ等に供給される信号のレベルをそれぞれ調整できるようにされている。すなわち図4は、そのような音響システムで、信号のレベルをそれぞれ調整するための調整装置の一例の構成を示す。

【0003】この図4において、入力端子21、22に供給された例えば2チャンネルの音声信号は、それぞれ設定ゲインのバッファアンプ23、24を通じてA/D変換器25、26に供給され、それぞれ所定のデジタル

信号に変換される。なおバッファアンプ23、24の出力が入力レベルメータ27、28に供給されて、入力レベルの表示が行われる。

【0004】さらに上述のA/D変換器25、26で変換されたデジタル信号がデジタル信号処理装置(DSP)29に供給されて、それぞれ所定の信号処理が行われる。またこのDSP29には、中央処理装置(CPU)30からの制御信号が供給されて、それぞれの信号処理の内容が制御される。またこのCPU30には、I/Oポート31、キーボード32、メモリ33、表示装置34等が接続されて、それぞれ上述の処理内容の入力やそれに応じた表示等が行われる。

【0005】そしてこのDSP29で処理された信号が、例えばブロック100で示される出力調整ブロックAに供給される。この出力調整ブロックA(100)では、例えばDSP29からのデジタル信号がD/A変換器41に供給され、例えば2チャンネルのアナログ音声信号に変換される。

【0006】さらにこれらのアナログ音声信号が、それぞれバッファアンプ42、43を通じてボリューム(VR)44、45に供給され、このボリューム44、45のそれぞれ摺動子からの信号がバッファアンプ46、47を通じて取り出される。これによってこれらのボリューム44、45の摺動位置に応じて信号のレベル調整が行われる。

【0007】これらのレベル調整された信号が出力レベルメータ48、49に供給されて、それぞれ出力レベルの表示が行われる。また、これらのレベル調整された信号が、それぞれ設定された半固定のアッテネータ50、51、バッファアンプ52、53、出力ミューティング用のスイッチ54、55を通じて、出力端子35、36に取り出される。

【0008】そしてこの出力調整ブロックA(100)において、ボリューム44、45の摺動子の摺動位置がCPU30からの制御信号で駆動されるモータ58、59によって制御される。さらにボリューム44、45の摺動子は手動でも摺動されるように構成されている。

【0009】なお、図中の出力調整ブロックB～Dには、図示しないがそれぞれ出力調整ブロックA(100)と同様の構成が設けられる。そしてそれぞれDSP29で処理された信号がD/A変換及びレベル調整されて出力端子に取り出されると共に、CPU30からの制御信号によって、内部の出力ミューティング用のスイッチ及びボリュームの摺動子の摺動位置の制御が行われる。

【0010】従ってこの装置において、入力端子21、22に供給された例えば2チャンネルの音声信号が、それぞれDSP29で信号処理が行われ、それぞれレベル調整されて8チャンネルで取り出される。そしてこの8チャンネルの出力をそれぞれのスピーカ(図示せず)に

供給することによって、例えば業務用のホール等で用いられる音響システムを構成することができる。

【0011】そしてさらにこの装置において、例えばホールで演奏されるプログラム等に応じて、DSP29で行われる信号処理の内容やそれぞれの信号レベルの調整値を予めメモリ33に記憶させておくことによって、必要ときにこのメモリ33をCPU30から読み出して、所望の信号処理やレベル調整を容易に実現することができるものである。

【0012】ところがこの装置において、例えば出力調整ブロックA(100)に設けられるボリューム44、45の摺動子は、上述のように手動でも摺動されるように構成されている。これは出力調整ブロックB~Dに設けられるレベル調整用のボリュームについても同様である。

【0013】このためこのような調整用ボリュームは、例えば全ての調整が完了した後で、誤って操作されてしまう恐れがある。その場合にこのような調整は相互に影響して複雑に組み合わせられており、例えば誤操作された位置が不明であると、全ての調整を最初からやり直さなければならぬ場合も生じる。

【0014】そこでこのような調整結果を例えばメモリ33に記憶することが行われるが、このような記憶の手順は一般に簡単ではなく、従って例えば調整作業の途中で装置の側を離れる場合などに、いちいち途中の調整状態をメモリに記憶するようなことは通常は行われないものである。

【0015】また、例えば所定の調整の下に運用されている状態で、上述の調整用ボリュームが誤って操作されてしまうと、例えば音声のレベルが突然大小に変化され、極めて聞き苦しい事態になってしまう恐れもある。この場合には、例えばメモリ33に記憶された調整値を読み出して復帰させることになるが、この読み出しの手順も咄嗟には行うことができない恐れがあるものである。

【0016】これに対して、上述の調整用ボリュームの摺動子を動きにくいものにしたり、摺動子にロック機構を設けることも考えられるが、これでは通常の調整を行う際の操作性が悪化したり、また装置の構成が複雑になってしまうなどの問題点がある。

【0017】

【発明が解決しようとする課題】この出願はこのように鑑みて成されたものであって、解決しようとする問題点は、従来は、調整用ボリュームが誤って操作された場合に、それを元の状態に復帰させることが容易ではなかったというものである。

【0018】

【課題を解決するための手段】このため本発明においては、任意の時点のボリュームの摺動位置を記憶し、現在の摺動位置が記憶された摺動位置となるように制御を行

うものであって、これによれば、誤って動かされたボリュームが元の摺動位置に自動復帰され、ボリュームの誤操作を良好に防止することができる。

【0019】

【発明の実施の形態】すなわち本発明においては、ボリュームをモータ駆動にて操作できるようにすると共に、ボリュームの摺動位置に応じた値を検出し、任意の時点の摺動位置に応じた値を記憶し、この記憶された値と検出された値とが一致するようにモータ駆動を行って、誤って動かされたボリュームを任意の時点の摺動位置に自動復帰させてなるものである。

【0020】以下、図面を参照して本発明を説明するに、図1は本発明によるボリューム誤操作防止方法及び装置を適用した調整用ボリュームの一例の構成を示すブロック図である。

【0021】この図1において、上述の信号のレベルを調整する第1のボリューム1に対して、これと連動する第2のボリューム2が設けられる。なお、ボリューム1は例えば上述図4のボリューム44、45に対応し、この一端が上述のアンプ42、43の出力に接続され、他端が接地され、摺動子がアンプ46、47の入力に接続されるものである。

【0022】また、ボリューム2の一端には例えば+5Vの直流が印加され、このボリューム2の他端が接地される。これによってこのボリューム2の摺動子からは、連動する第1及び第2のボリューム1、2の摺動子の摺動位置に応じた電圧が取り出される。すなわち信号のレベルを調整する第1のボリューム1の摺動子の摺動位置に応じた電圧が取り出される。

【0023】さらにこれらの第1及び第2のボリューム1、2を同時に摺動する駆動モータ3(図4のモータ58、59に相当する)が設けられる。また中央処理装置(CPU)4が設けられ、このCPU4からの出力値がD/A変換器5を通じて比較器6に供給される。さらにボリューム2の摺動子からの出力電圧が比較器6に供給される。そしてこの比較器6からの比較出力が駆動モータ3に供給される。

【0024】またCPU4からは比較器6のオンオフを制御する制御信号が比較器6に供給される。これによって駆動モータ3は、比較器6がオンの期間に、CPU4からの出力値に応じた電圧とボリューム2の摺動子からの出力電圧とが一致するように駆動される。すなわちボリューム1の摺動子の摺動位置が、CPU4に予め設定された値の位置になるように駆動モータ3による駆動が行われる。

【0025】そこでさらに、ボリューム2の摺動子からの出力電圧がA/D変換器7を通じてCPU4に供給される。またこのCPU4には、所定のメモリ8とキーボード9が接続され、このキーボード9からの指示に従ってCPU4に供給された値がメモリ8に記憶される。ま

た、手動つまみ10は第1及び第2のボリューム1、2を手動で操作するためのつまみである。

【0026】従って例えば上述のCPU4からの信号によって比較器6をオフにして、例えば手動つまみ10によってボリューム1を操作して所望の信号レベルの調整を行うことができる。

【0027】また、このボリューム1の摺動子の摺動位置がボリューム2の摺動子からの出力電圧によって検出され、この検出値がCPU4に供給される。そして全ての調整が完了した状態で、例えばメモリモードがキーボード9から指示されると、このときCPU4に供給されている値がメモリ8に記憶される。

【0028】さらに例えばリコールモードがキーボード9から指示されると、メモリ8に記憶された値がCPU4で読み出される。そしてこの読み出された値に従って駆動モータ3が駆動されて、上述のメモリモードが指示されたときの状態にボリューム1の摺動子の摺動位置が移動される。これによって、所望の信号処理やレベル調整を容易に実現することができる。

【0029】そしてさらにこの装置において、ロックモードが例えばキーボード9から指示されると、CPU4では例えば図2のフローチャートに示すような動作が行われる。すなわち図2においては、ロックモードのキー入力によって動作が開始される。そしてまずステップ【1】でこのときCPU4に供給されている値がメモリ8に記憶される。

【0030】次にステップ【2】でメモリ8に記憶された値が読み出され、ステップ【3】で比較器6をオンにして読み出された値に従って駆動モータ3が駆動される。さらにステップ【4】でロックモードが解除されたか否かが判断され、解除されていないとき(No)はステップ【2】に戻される。また解除されているとき(Yes)は動作が終了される。

【0031】これによって、このロックモードが例えばキーボード9から指示されると、このロックモードが指示されたときの状態がメモリ8に記憶され、このときの状態にボリューム1の摺動子の摺動位置が保持される。すなわち例えば手動つまみ10が誤って操作されても、ロックモードが指示されたときの状態に戻るよう駆動モータ3が駆動され、ボリューム1の摺動子の摺動位置が自動復帰させる。

【0032】従ってこの装置において、任意の例えばロックモードが指示された時点のボリュームの摺動位置を記憶して、現在の摺動位置が記憶された摺動位置となるように制御を行うことができる。

【0033】これによって、従来は調整用ボリュームが誤って操作された場合に、それを元の状態に復帰させることが容易ではなかったものを、本発明によれば、誤って動かされたボリュームが元の摺動位置に自動復帰され、ボリュームの誤操作を良好に防止することができる

ものである。

【0034】また上述の装置において、例えば運用中に調整用ボリューム1が誤操作された場合には、例えばCPU4においてA/D変換器7から供給される値とメモリ8に記憶された値とから誤差分を検出し、この誤差分を信号レベル調整手段としての例えば図4のDSP29に供給して信号レベルの補正を行うことができる。

【0035】この場合には、例えばDSP29の負担が一時的に増し、例えば他の機能が制限される恐れはあるが、直ちに調整用ボリューム1の摺動位置が修正され、元の状態に復帰されることによって、DSP29の負担は減少され、長期に亘って重大な問題の発生する恐れを防止することができる。また誤差分が発生したことを検出して、表示装置34等で警報を発生させることもできる。

【0036】なおこれらの動作は、例えば上述の図3のフローチャートのステップ【3】の後に、例えば図4に示すように調整差の検出のステップ【11】、DSP調整のステップ【12】、警報発生ステップ【13】を設けることによって実施することができる。

【0037】こうして上述のボリューム誤操作防止方法及び装置によれば、ボリュームをモータ駆動にて操作できるようにすると共に、ボリュームの摺動位置に応じた値を検出し、任意の時点の摺動位置に応じた値を記憶し、この記憶された値と検出された値とが一致するようにモータ駆動を行って、誤って動かされたボリュームを任意の時点の摺動位置に自動復帰させることにより、ボリュームの誤操作を良好に防止することができるものである。

【0038】なお上述の装置において、ボリューム1の調整に用いられるCPU4は、上述図4のCPU30と兼用することができる。また比較器6の動作は、例えばCPU4でソフトウェアで処理することも可能である。

【0039】さらに本発明のボリューム誤操作防止方法及び装置は、上述の例えば業務用のホール等で用いられる音響システムの調整装置に限らず、例えばオーディオアンプのメインボリュームや、業務用のオーディオミキサーのムービングフェーダー等の、駆動モータを装備したボリュームには全て適用できるものである。

【0040】

【発明の効果】この発明によれば、任意の例えばロックモードが指示された時点のボリュームの摺動位置を記憶して、現在の摺動位置が記憶された摺動位置となるように制御を行うことができるようになった。

【0041】これによって、従来は調整用ボリュームが誤って操作された場合に、それを元の状態に復帰させることが容易ではなかったものを、本発明によれば、誤って動かされたボリュームが元の摺動位置に自動復帰され、ボリュームの誤操作を良好に防止することができるものである。

【0042】また本発明によれば、例えば運用中に調整用ボリュームが誤操作された場合にその誤差分を検出し、その誤差分を例えばDSPに供給して信号レベルの補正を行うことができる。さらに誤差分が発生したことを検出して、警報を発生させることもできる。

【図面の簡単な説明】

【図1】本発明のボリューム誤操作防止方法及び装置の適用される装置の一例の構成図である。

【図2】その動作の説明のためのフローチャート図である。

【図3】その動作の説明のためのフローチャート図である。

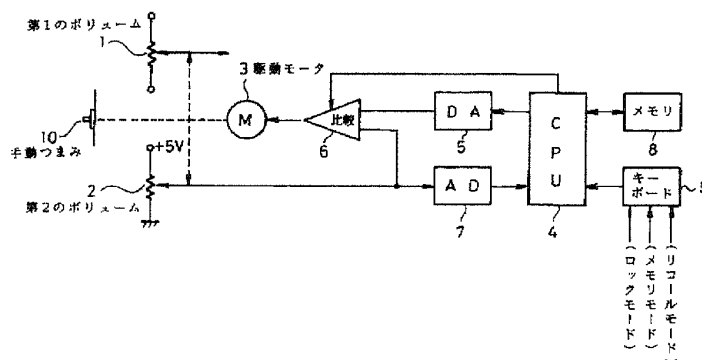
【図4】本発明のボリューム誤操作防止方法及び装置の*

*適用される装置の一例の全体の構成図である。

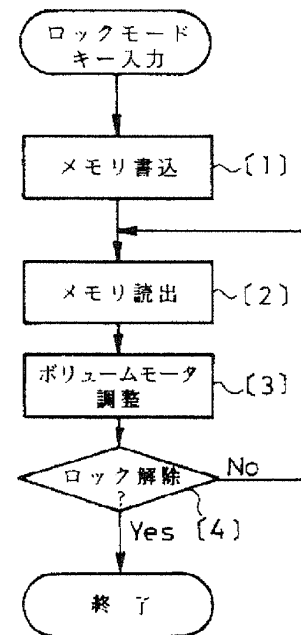
【符号の説明】

- 1 信号のレベルを調整する第1のボリューム
- 2 連動する第2のボリューム
- 3 駆動モータ
- 4 中央処理装置(CPU)
- 5 D/A変換器
- 6 比較器
- 7 A/D変換器
- 8 メモリ
- 9 キーボード
- 10 手動つまみ

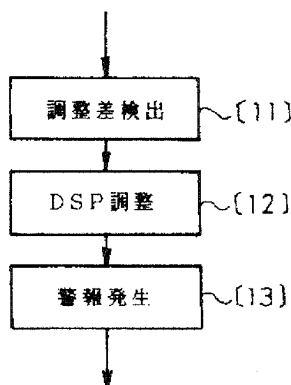
【図1】



【図2】



【図3】



Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		RECEIVING APPARATUS AND CONTROL METHOD		
First Named Inventor/Applicant Name:		Kazuomi Tachigi		
Filer:		Gregory Turocy/Rebecca Veri		
Attorney Docket Number:		SAJVP127US		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	280	280
UTILITY SEARCH FEE	1111	1	600	600
UTILITY EXAMINATION FEE	1311	1	720	720
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1600

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EFS ID:	27658433
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Customer Number:	23623
Filer:	Gregory Turocy/Rebecca Veri
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	Document Description		Start	End	
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RECEIVING APPARATUS AND CONTROL METHOD

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to and incorporates by reference the entire contents of Japanese Patent Application No. 2015-238210 filed in Japan on December 7, 2015.

FIELD

[0002] The present disclosure relates to a receiving apparatus and a control method.

BACKGROUND

[0003] A Portable transceiver typically has a volume lock function that locks audio volume. Such a transceiver can avoid a sudden output of audio with an unexpectedly high volume level, for example, when a volume key is inadvertently operated.

[0004] Japanese Patent Application Laid-open No. JPH09130173 discloses an apparatus that automatically returns a volume key that has been inadvertently operated to a position at any given point in time.

[0005] The known transceiver requires that, to set the volume again after the volume has been locked, the locked state be canceled and then the volume key be operated to thereby set the locked state. Thus, the known transceiver requires complicated operations for setting again the volume to be locked. Additionally, when the volume key is inadvertently operated in the locked state, the known transceiver outputs audio at an unintentional volume level as

soon as the locked state is canceled. Thus, when the volume is reset after the volume has been locked in the known transceiver, audio at an unintentional volume level will be output as soon as the locked state has been canceled.

SUMMARY

[0006] It is an object of the present disclosure to at least partially solve the problems in the conventional technology.

[0007] According to one aspect, there is provided a receiving apparatus comprising an audio output unit configured to output audio corresponding to an audio signal, a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation, a lock controller configured to switch between a non-locked state in which the volume level of the audio can be varied based on the operating value and a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value, and a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in the non-locked state and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in the locked state, wherein the lock controller is further configured to switch, when a predetermined operating part is turned on in the locked state, the locked state to the non-locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off,

and to update the lock value with the operating value and switch the non-locked state to the locked state when the predetermined operating part is turned off after having switched to the non-locked state.

[0008] According to one aspect, there is provided a control method for a receiving apparatus, the receiving apparatus comprising an audio output unit configured to output audio corresponding to an audio signal, a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation, and a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in a non-locked state in which the volume level of the audio can be varied based on the operating value and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value, the control method comprising, when a predetermined operating part is turned on in the locked state, switching the locked state to the non-locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off, and when the predetermined operating part is turned off after having switched to the non-locked state, updating the lock value with the operating value and switching the non-locked state to the locked state.

[0009] The above and other objects, features, advantages and technical and industrial significance of this disclosure

will be better understood by reading the following detailed description of presently preferred embodiments of the disclosure, when considered in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is a diagram illustrating a hardware configuration of a transceiver according to an embodiment;
[0011] FIG. 2 is a diagram illustrating a functional configuration for an audio output by the transceiver according to the embodiment;
[0012] FIG. 3 is a flowchart illustrating a process for switching between a non-locked state and a locked state;
[0013] FIG. 4 is a flowchart illustrating a process performed when a volume operating unit is operated; and
[0014] FIG. 5 is a flowchart illustrating a process performed to change a lock value.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0015] FIG. 1 is a diagram illustrating a hardware configuration of a transceiver 10 according to an embodiment. The transceiver 10 has functions of a transmitting apparatus that wirelessly transmits an audio signal and a receiving apparatus that wirelessly receives an audio signal.
[0016] The transceiver 10 includes an antenna 20, a transmitter/receiver circuit 22, a microphone 24, a speaker 26, a signal processing circuit 28, a main control circuit 30, a nonvolatile memory 32, a display 34, a volume key 36, a push to talk (PTT) switch 38, a monitor key 40, and an operating key group 42.

[0017] The antenna 20 emits electromagnetic waves in the air and acquires the electromagnetic waves in the air. The transmitter/receiver circuit 22 acquires, during transmitting the electromagnetic waves, a modulation signal from the signal processing circuit 28 and modulates a carrier wave with the acquired modulation signal to thereby generate a modulated signal, specifically, a transmission signal. During transmitting the electromagnetic waves, the transmitter/receiver circuit 22 transmits the transmission signal to another apparatus (another transceiver 10), a base station, or the like via the antenna 20. During receiving the electromagnetic waves, the transmitter/receiver circuit 22 receives a modulated signal from another apparatus, a base station, or the like via the antenna 20. The transmitter/receiver circuit 22 then demodulates the received modulated signal, specifically, a reception signal to thereby generate a demodulation signal. The transmitter/receiver circuit 22 applies the demodulation signal to the signal processing circuit 28 during receiving the electromagnetic waves.

[0018] The microphone 24 collects ambient sound. The microphone 24 converts the ambient sound to a corresponding electric signal to thereby output an audio signal. The speaker 26 converts the audio signal to vibration to thereby emit sound to the outside.

[0019] The signal processing circuit 28 performs a predetermined process, such as bandwidth limiting process, for the audio signal output from the microphone 24 to thereby generate a modulation signal during transmitting the electromagnetic waves. The signal processing circuit 28

applies the generated modulation signal to the transmitter/receiver circuit 22. During receiving the electromagnetic waves, the signal processing circuit 28 performs, for example, a bandwidth limiting process for the demodulation signal output from the transmitter/receiver circuit 22 to thereby extract an audio signal. The signal processing circuit 28 applies the extracted audio signal to the speaker 26. It is noted that the signal processing circuit 28 may include an AD/DA converter circuit to perform digital signal processing or may perform analog signal processing.

[0020] The main control circuit 30 controls the transceiver 10 totally. The main control circuit 30 includes, for example, a central processing unit (CPU), a read only memory (ROM), and a random access memory (RAM). The main control circuit 30 executes a previously installed program to thereby control different elements including the signal processing circuit 28. The nonvolatile memory 32 may, for example, be a flash memory. The nonvolatile memory 32 stores the program executed by the main control circuit 30 and various types of setting values used for transmission and reception.

[0021] The display 34 is disposed on, for example, a main surface of a cabinet and displays information for a user. The main control circuit 30 controls the display 34 so as to display various types of information on the display 34.

[0022] The volume key 36 is a part that can be operated by the user to vary a volume level of audio output during receiving the electromagnetic waves. The volume key 36 is a mechanical operating part disposed in the cabinet. The

volume key 36 may, for example, be a rotary variable resistor in which the position of a rotary shaft represents the volume level. The main control circuit 30 applies voltage to the volume key 36 and detects through AD conversion a voltage value corresponding to an angular position. The main control circuit 30 acquires the detected voltage value as an operating value corresponding to the angular position of the volume key 36.

[0023] The PTT switch 38 switches between transmission and reception. The PTT switch 38 is a momentary switch that is turned on, for example, when the user depresses the switch and turned off when the user releases the switch. The main control circuit 30 performs a transmission process when the PTT switch 38 is on and a reception process when the PTT switch 38 is off.

[0024] The monitor key 40 cancels a squelch function that will be described later. The monitor key 40 is a momentary switch that is turned on, for example, when the user depresses the switch and turned off when the user releases the switch. The squelch function stops, during receiving the electromagnetic waves, the output of an audio signal when an effective reception signal is not included in a received signal and outputs the audio signal when the effective reception signal is included in the received signal. The monitor key 40 can be turned on even when the effective reception signal is not included during receiving the electromagnetic waves, to thereby allow the audio signal to be output from the speaker 26.

[0025] The operating key group 42 includes a plurality of keys for operating the transceiver 10. The operating key

group 42 includes, for example, a power button, a channel selector switch, and a state changeover switch. The main control circuit 30 detects an operation performed on the operating key group 42 to thereby control the transceiver 10.

[0026] FIG. 2 is a diagram illustrating a functional configuration for an audio output by the transceiver 10 according to the embodiment. The transceiver 10 includes an audio output unit 62, a squelch processor 66, a volume operating unit 72, a lock controller 74, and a volume controller 76.

[0027] The audio output unit 62 receives a demodulation signal output from the transmitter/receiver circuit 22. The audio output unit 62 extracts an audio signal from the demodulation signal and applies the extracted audio signal to the speaker 26. The audio output unit 62 is achieved by the signal processing circuit 28.

[0028] The squelch processor 66 performs the squelch function. Two techniques are available to achieve the squelch function. The first technique is referred to as noise squelch that detects noise outside a demodulation bandwidth and stops the output of the demodulation signal when the noise is equal to or higher than a predetermined level. The first technique also reduces noise outside the demodulation bandwidth when the noise is equal to or higher than the predetermined level. Thus the first technique enables the output of the demodulation signal when it detects that the noise level is reduced. The second technique is referred to as tone squelch or code squelch. The second technique modulates the modulation signal with a control signal, such as a predetermined tone signal or digital code

signal. When such a control signal is detected, the second technique enables the output of the demodulation signal. The second technique stops the output of the demodulation signal when the predetermined tone or code control signal is not detected from the reception signal.

[0029] Specifically, when the reception signal is equal to or lower than the predetermined level or the reception signal contains no control signal by which the squelch function is canceled, the squelch processor 66 stops the output of audio by the audio output unit 62. The squelch processor 66 may take any approach to determine whether the reception signal contains a control signal by which the squelch is canceled. The squelch processor 66 can stop the output of white noise during silence or demodulated audio of an unnecessary signal as described above.

[0030] In addition, the squelch processor 66 cancels the squelch function in accordance with an operation performed by the user. Specifically, the squelch processor 66 causes the audio output unit 62 to output audio in accordance with the operation performed by the user regardless of whether the reception signal is present or the reception signal contains a control signal. For example, the squelch processor 66 cancels the squelch function when the monitor key 40 is turned on. Thus, when the monitor key 40 is turned on, the transceiver 10 can output audio such as white noise and adjust a volume level of the audio even when no reception signal is present. The squelch processor 66 is achieved by the signal processing circuit 28 and the main control circuit 30.

[0031] The volume operating unit 72 outputs an operating

value that indicates the volume level of audio in accordance with the operation performed by the user. For example, the volume operating unit 72 is achieved by the volume key 36 and the main control circuit 30. When the volume key 36 is a rotary variable resistor having three terminals, for example, a predetermined voltage is applied across a resistor in the volume key 36. The main control circuit 30 detects, through analog-to-digital conversion, voltage at a movable terminal in the volume key 36 and, on the basis of the detected voltage, detects a value corresponding to the angular position of the volume key 36. The main control circuit 30 then outputs the value corresponding to the detected angular position as the operating value.

[0032] The lock controller 74 switches between a non-locked state and a locked state in accordance with the operation performed by the user. In the non-locked state, the volume level of audio can be varied according to the operating value output by the volume controller 76. In the locked state, the volume level of audio is fixed at a constant level. For example, the lock controller 74 changes the state from the non-locked state to the locked state, or vice versa, depending on the operation performed on the operating key group 42.

[0033] The volume controller 76 controls the volume level of audio output from the audio output unit 62. More specifically, in the non-locked state, the volume controller 76 causes the audio output unit 62 to output audio having the volume level corresponding to the operating value output by the volume operating unit 72. Specifically, in the non-locked state, the volume controller 76 varies the volume

level of audio in accordance with the operating value of the volume operating unit 72. In the locked state, the volume controller 76 causes the audio output unit 62 to output audio having the volume level indicated by a lock value registered in the lock controller 74. Specifically, in the locked state, the volume controller 76 fixes the volume level of audio regardless of the operating value output by the volume operating unit 72.

[0034] The lock controller 74 registers the lock value that indicates the volume level of audio to be output in the locked state. Specifically, when the non-locked state is switched to the locked state in accordance with the operation performed by the user, the lock controller 74 registers the operating value of the volume operating unit 72 at the switching operation as the lock value.

[0035] The lock controller 74 can register any operating value output by the volume operating unit 72 as the lock value. For example, the lock controller 74 can register any operating value that ranges from an operating value representing mute to an operating value representing a maximum volume level as the lock value. Thus, in the locked state, the volume controller 76 can fix audio at mute or at the maximum volume level.

[0036] Additionally, the lock controller 74 updates a registered lock value when the user performs an operation through a predetermined procedure in the locked state. Specifically, the lock value is updated through the following procedure.

[0037] When a predetermined operating part is turned on in the locked state, the lock controller 74 maintains the locked

state for a period of time that starts when the predetermined operating part is turned on and ends when the operating value output by the volume operating unit 72 becomes a value that falls within a predetermined range based on the lock value. In this case, the lock controller 74 may display, on the display 34, information indicating the locked state for the period of time that starts when the predetermined operating part is turned on and ends when the operating value becomes a value that falls within the predetermined range based on the lock value.

[0038] The lock controller 74 switches from the locked state to the non-locked state during a period of time that starts when the operating value becomes a value that falls within the predetermined range based on the lock value and ends when the predetermined operating part is turned off. It should be noted that, if the operating value is a value that falls within the predetermined range based on the lock value when the predetermined operating part is turned on in the locked state, the locked state is switched to the non-locked state when the predetermined operating part is turned on.

[0039] When the predetermined operating part is turned off after the locked state has been switched to the non-locked state, the lock controller 74 updates the lock value with the operating value output by the volume operating unit 72 at the time at which the predetermined operating part is turned off, and switches to the locked state. Thus the lock controller 74 can update the lock value.

[0040] It is here noted that the predetermined operating part is the monitor key 40 in the present example. Thus, when the monitor key 40 is turned on and under a condition in

which the audio output unit 62 outputs audio regardless of whether the reception signal contains an effective audio signal, the lock controller 74 changes the lock value. Thereby the effective audio can be output when the reception signal is present and white noise can be output even when the reception signal is not present. Thus the lock controller 74 can allow the user to reset the volume level to be fixed while checking the volume level of audio.

[0041] FIG. 3 is a flowchart illustrating a process for switching between the non-locked state and the locked state. To switch between the non-locked state and the locked state, the lock controller 74 performs the process illustrated in the flowchart of FIG. 3.

[0042] At Step S111, the lock controller 74 determines whether the user operates the operating key group 42 and operates a volume lock menu that serves as a user interface for changing a volume lock setting. If it is determined that the volume lock menu has not been operated (No at S111), the lock controller 74 waits at Step S111. If it is determined that the volume lock menu has been operated (Yes at S111), the lock controller 74 proceeds to Step S112.

[0043] At Step S112, the lock controller 74 determines specific details of the operation. If it is determined at Step S112 that the operation performed was to switch from the locked state to the non-locked state, the lock controller 74 performs Step S113. At Step S113, the lock controller 74 switches from the locked state to the non-locked state. For example, the lock controller 74 changes the value of a predetermined flag that indicates the locked state from 1 to 0. After completing Step S113, the lock controller 74

completes the process.

[0044] If it is determined at Step S112 that the operation performed was to switch from the non-locked state to the locked state, the lock controller 74 performs Step S114. At Step S114, the lock controller 74 acquires an operating value output by the volume operating unit 72 and registers the acquired operating value as a lock value. For example, the lock controller 74 stores the operating value in a predetermined storage space. Then, at Step S115, the lock controller 74 switches from the non-locked state to the locked state. For example, the lock controller 74 changes the value of the predetermined flag that indicates the locked state from 0 to 1. After completing Step S115, the lock controller 74 completes the process.

[0045] As described above, the lock controller 74 can switch between the non-locked state and the locked state in accordance with the operation performed by the user. In addition, when the locked state is switched from the non-locked state to the locked state in accordance with the operation performed by the user, the lock controller 74 can register the operating value of the volume operating unit 72 at the switching operation as the lock value.

[0046] FIG. 4 is a flowchart illustrating a process performed when the volume operating unit 72 is operated. When the volume operating unit 72 is operated, the volume controller 76 performs the process illustrated in the flowchart of FIG. 4.

[0047] At Step S121, the volume controller 76 determines whether the volume operating unit 72 has been operated to thereby change the operating value output from the volume

operating unit 72. If it is determined that the operating value has not been changed (No at Step S121), the volume controller 76 waits at Step S121. If it is determined that the operating value has been changed (Yes at Step S121), the volume controller 76 proceeds to Step S122.

[0048] At Step S122, the volume controller 76 determines whether the volume is in the locked state. For example, the volume controller 76 determines whether the value of the predetermined flag that indicates the locked state is 1.

[0049] If it is determined that the volume is not in the locked state (No at Step S122), in other words, that the volume is in the non-locked state, the volume controller 76 proceeds to Step S123. At Step S123, the volume controller 76 causes the audio output unit 62 to output audio having the volume level corresponding to the operating value output by the volume operating unit 72. For example, the volume controller 76 sets an operating value in the audio output unit 62 to thereby vary an amplification factor of the volume level at the audio output unit 62. After completing Step S123, the volume controller 76 completes the process.

[0050] If it is determined that the volume is in the locked state (Yes at Step S122), the volume controller 76 proceeds to Step S124. At Step S124, the volume controller 76 causes the audio output unit 62 to output audio having the volume level corresponding to the lock value registered by the lock controller 74. For example, the volume controller 76 reads the lock value from the predetermined storage space and sets the read lock value in the audio output unit 62 to thereby set the amplification factor of the volume level for the audio output unit 62. After completing Step S124, the

volume controller 76 completes the process.

[0051] As described above, in the non-locked state, the volume controller 76 can cause the audio output unit 62 to output audio having the volume level corresponding to the operating value output by the volume operating unit 72. Specifically, in the non-locked state, the volume controller 76 can vary the volume level of the output audio in accordance with the operation performed on the volume operating unit 72 by the user.

[0052] In the locked state, the volume controller 76 can cause the audio output unit 62 to output audio having the volume level indicated by the registered lock value. Specifically, in the locked state, the volume controller 76 can fix the volume level corresponding to the registered lock value for the audio to be output even when the user operates the volume operating unit 72.

[0053] FIG. 5 is a flowchart illustrating a process performed to change the lock value. To change a previously registered lock value in the locked state, the squelch processor 66 and the lock controller 74 perform the process illustrated in the flowchart of FIG. 5.

[0054] At Step S131, the squelch processor 66 and the lock controller 74 determine whether the monitor key 40 has been turned on. If it is determined that the monitor key 40 has not been turned on (No at Step S131), the squelch processor 66 and the lock controller 74 wait at Step S131. If it is determined that the monitor key 40 has been turned on (Yes at Step S131), the squelch processor 66 and the lock controller 74 proceeds to Step S132.

[0055] At Step S132, the squelch processor 66 cancels the

squelch function. The cancellation allows the audio output unit 62 to output audio regardless of whether the reception signal contains an effective audio signal. Thus, the user can later vary the lock value, while checking the volume level including white noise. It is noted that the volume is in the locked state at Step S132 and thus the audio output unit 62 outputs audio having the volume level corresponding to the lock value registered by the lock controller 74.

[0056] At Step S133, the lock controller 74 acquires the operating value output by the volume operating unit 72. At Step S134, the lock controller 74 determines whether the acquired operating value is a value that falls within a predetermined range based on the registered lock value. The predetermined range based on the lock value ranges, for example, from a lock value obtained by subtracting a predetermined first value from the lock value to a lock value obtained by adding a predetermined second value to the lock value. More specifically, the predetermined range based on the lock value ranges, for example, from a value of 95% of the lock value to a value of 105% of the lock value. The predetermined range based on the lock value may even be a range covering values smaller than the lock value.

[0057] At Step S134, if it is determined that the operating value does not fall within the predetermined range based on the lock value (No at Step S134), the lock controller 74 proceeds to Step S135. At Step S135, the lock controller 74 displays information indicating the locked state on the display 34. Then at Step S136, the lock controller 74 maintains the locked state. The maintaining of the locked state enables the volume controller 76 to fix the

volume level of audio to be output from the audio output unit 62 by the currently registered lock value.

[0058] At Step S137, the squelch processor 66 and the lock controller 74 determine whether the monitor key 40 has been turned off. If it is determined that the monitor key 40 has not been turned off (No at Step S137), specifically, if the monitor key 40 is kept on, the squelch processor 66 and the lock controller 74 return the process to Step S133 and repeat steps from Step S133 to Step S137.

[0059] The process of repeating steps from Step S133 to Step S137 allows the lock controller 74 to maintain the locked state for a period of time that starts when the monitor key 40 is turned on and ends when the operating value output by the volume operating unit 72 becomes a value that falls within the predetermined range based on the lock value. Thus, the lock controller 74 can maintain the locked state even when the volume operating unit 72 is operated by the user, unless the operating value becomes a value that falls within the predetermined range based on the lock value. A situation in which a high volume level of audio is suddenly output can thus be eliminated. Furthermore, for the period of time that starts when the monitor key 40 is turned on and ends when the operating value becomes a value that falls within the predetermined range based on the lock value, the lock controller 74 can display on the display 34 the information indicating the locked state. Thereby the lock controller 74 can inform the user that an operation of the volume operating unit 72 does not result in the volume level being varied.

[0060] If it is determined that the monitor key 40 has

been turned off (Yes at Step S137), the squelch processor 66 proceeds to Step S138. At Step S138, the squelch processor 66 enables the squelch function. These steps allow the lock controller 74 to terminate the process for changing the lock value without changing the lock value. After completing Step 138, the squelch processor 66 and the lock controller 74 completes the process.

[0061] If it is determined that the operating value is a value that falls within the predetermined range based on the lock value (Yes at Step S134), the lock controller 74 proceeds to Step S139. At Step S139, the lock controller 74 stops displaying the information indicating the locked state, if the information has been displayed on the display 34. Then, at Step S140, the lock controller 74 changes the locked state to the non-locked state.

[0062] Then, at Step S141, the volume controller 76 varies the volume level of audio to be output from the audio output unit 62 corresponding to the operating value output by the volume operating unit 72. Then at Step S142, the squelch processor 66 and the lock controller 74 determine whether the monitor key 40 has been turned off. If it is determined that the monitor key 40 has not been turned off (No at Step S142), specifically, whether the monitor key 40 is kept on, the squelch processor 66 and the lock controller 74 return to Step S141 and repeat Step S141 and Step S142.

[0063] The performance of steps from Step S141 to Step S142 allows the lock controller 74 to maintain the non-locked state for a period of time that starts when the operating value becomes a value that falls within the predetermined range based on the lock value and ends when the monitor key

40 is turned off, to thereby enable the volume level of audio output from the audio output unit 62 to be continuously varied corresponding to the operating value output by the volume operating unit 72. As such, the lock controller 74 can output audio having the volume level corresponding to the operation performed by the user on the volume operating unit 72 after the operating value becomes a value that falls within the predetermined range based on the lock value.

[0064] If it is determined that the monitor key 40 has been turned off (Yes at Step S142), the lock controller 74 proceeds to Step S143. At Step S143, the lock controller 74 registers the operating value that is currently output by the volume operating unit 72 as the lock value. Then at Step S144, the lock controller 74 changes the non-locked state to the locked state. Then at Step S145, the volume controller 76 fixes the volume level of audio output from the audio output unit 62 by the volume level indicated by the lock value. Then at Step S146, the lock controller 74 displays on the display 34 the information indicating the locked state.

[0065] The performance of steps from Step S143 to Step S146 allows, when the monitor key 40 is turned off after the locked state has been changed to the non-locked state, the lock controller 74 to update the lock value with the operating value output by the volume operating unit 72 at a time when the monitor key 40 is turned off, to thereby change the non-locked state to the locked state. Thereby the lock controller 74 can easily change the lock value.

[0066] At Step S147, the squelch processor 66 enables the squelch function. After completing Step S147, the squelch processor 66 and the lock controller 74 completes the process.

[0067] As described above, when the predetermined operating part is turned on in the locked state, the transceiver 10 according to the embodiment maintains the locked state for the period of time that starts when the predetermined operating part is turned on and ends when the operating value output by the volume operating unit 72 becomes a value that falls within the predetermined range based on the lock value. Thus, the transceiver 10 maintains the locked state even when the volume operating unit 72 is operated by the user, unless the operating value becomes a value that falls within the predetermined range based on the lock value, so that the transceiver 10 can eliminate a situation in which a high volume level of audio is suddenly output.

[0068] Additionally, the transceiver 10 according to the embodiment maintains the non-locked state for the period of time that starts when the operating value becomes a value that falls within the predetermined range based on the lock value and ends when the predetermined operating part is turned off. Thereby, the transceiver 10 can output audio having the volume level corresponding to the operation performed by the user on the volume operating unit 72 after the operating value becomes a value that falls within the predetermined range based on the lock value. Thus, the transceiver 10 can allow the user to set the volume level depending on conditions of a surrounding environment, while checking the volume level at the same time.

[0069] When the predetermined operating part is turned off, the transceiver 10 updates the lock value with the operating value at the time and changes from the non-locked state to

the locked state. The transceiver 10 can thus change the lock value easily.

[0070] The present disclosure has been made in view of the foregoing situation and it is an object of the present disclosure to provide a receiving apparatus and a control method that enable reset of volume through a simple operation after the volume has been locked and that prevent audio with an unintentionally high volume level from being output on resetting the volume.

[0071] The present disclosure enables resetting of volume in the locked state in which the volume level of audio is fixed at a constant level.

[0072] Although the disclosure has been described with respect to specific embodiments for a complete and clear disclosure, the appended claims are not to be thus limited but are to be construed as embodying all modifications and alternative constructions that may occur to one skilled in the art that fairly fall within the basic teaching herein set forth.

What is claimed is:

1. A receiving apparatus, comprising:

an audio output unit configured to output audio corresponding to an audio signal;

a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation;

a lock controller configured to switch between a non-locked state in which the volume level of the audio can be varied based on the operating value and a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value; and

a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in the non-locked state and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in the locked state, wherein

the lock controller is further configured

to switch, when a predetermined operating part is turned on in the locked state, the locked state to the non-locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off, and

to update the lock value with the operating value and switch the non-locked state to the locked state when the predetermined operating part is turned off after having switched to the non-locked state.

2. The receiving apparatus according to claim 1, wherein, when the predetermined operating part is turned on in the locked state, the lock controller is further configured to maintain the locked state for a period of time that starts when the predetermined operating part is turned on and ends when the operating value becomes a value that falls within the predetermined range based on the lock value.

3. The receiving apparatus according to claim 2, wherein, when the predetermined operating part is turned on in the locked state, the lock controller is further configured to display information indicating the locked state for a period of time that starts when the predetermined operating part is turned on and ends when the operating value becomes a value that falls within the predetermined range based on the lock value.

4. The receiving apparatus according to claim 1, wherein the predetermined range based on the lock value ranges from a lock value obtained by subtracting a predetermined first value from the lock value to a lock value obtained by adding a predetermined second value to the lock value.

5. The receiving apparatus according to claim 1, wherein the predetermined range is a range covering values smaller than the lock value.

6. The receiving apparatus according to claim 1, further comprising:

a receiver configured to receive a reception signal

including a modulated audio signal and to demodulate the reception signal to thereby generate the audio signal; and

a squelch processor configured to stop outputting the audio by the audio output unit when the reception signal is equal to or lower than a predetermined level or the reception signal does not contain a predetermined control signal, wherein

the predetermined operating part is a monitor key for disabling a function of the squelch processor, and

when the monitor key is turned on, the squelch processor is configured to cause the audio output unit to output the audio regardless of whether the reception signal is present or does not contain the predetermined control signal.

7. The receiving apparatus according to claim 1, wherein the volume controller includes a mechanical operating device.

8. A control method for a receiving apparatus, the receiving apparatus comprising:

an audio output unit configured to output audio corresponding to an audio signal;

a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation; and

a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in a non-locked state in which the volume level of the audio can be varied based on the operating value and to cause the audio output unit to output the audio having a volume level corresponding to the

lock value in a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value, the control method comprising:

when a predetermined operating part is turned on in the locked state, switching the locked state to the non-locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off; and

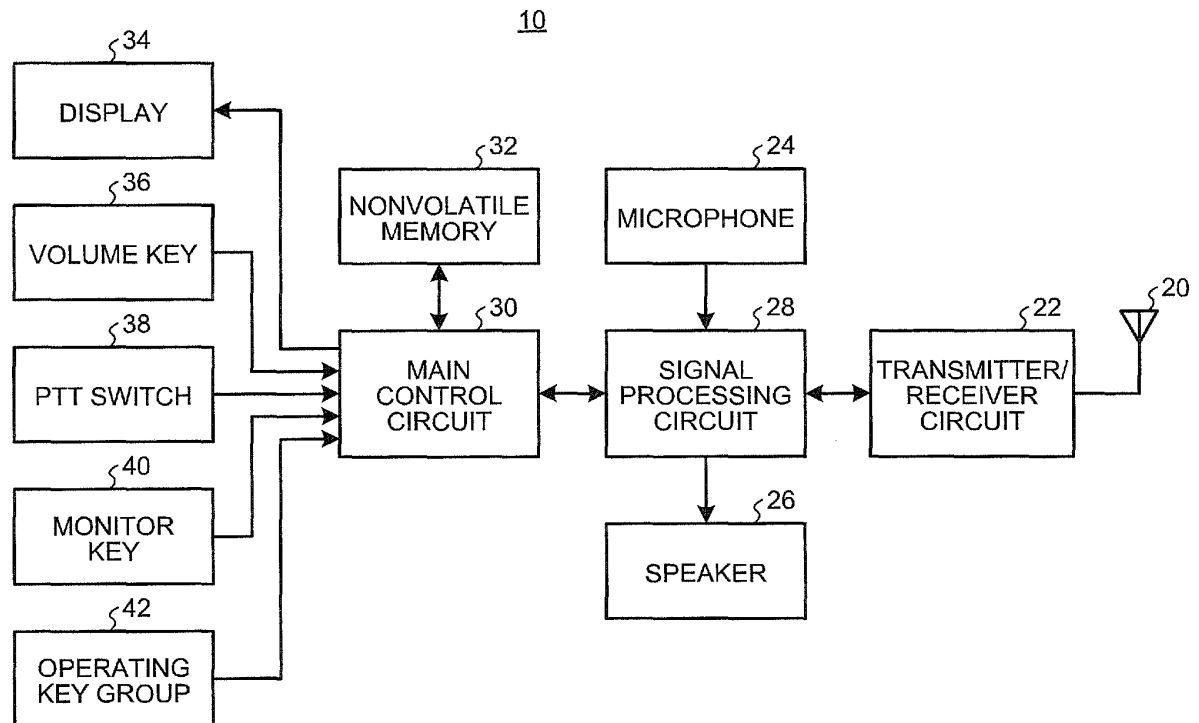
when the predetermined operating part is turned off after having switched to the non-locked state, updating the lock value with the operating value and switching the non-locked state to the locked state.

ABSTRACT

A receiving apparatus comprises an audio output unit, a volume operating unit outputting an operating value indicating a volume level of the audio according to a user operation, a lock controller switching between a non-locked state in which the volume level of the audio can be varied and a locked state in which the volume level is fixed, and a volume controller causing the audio output unit to output the audio having a volume level corresponding to the operating value in the non-locked state and the audio having a volume level corresponding to the lock value in the locked state, and switching the locked state to the non-locked state for a period of time on turning on a predetermined operating part and updating the lock value with the operating value, and switching the non-locked state to the locked state on turning off the predetermined operating part.

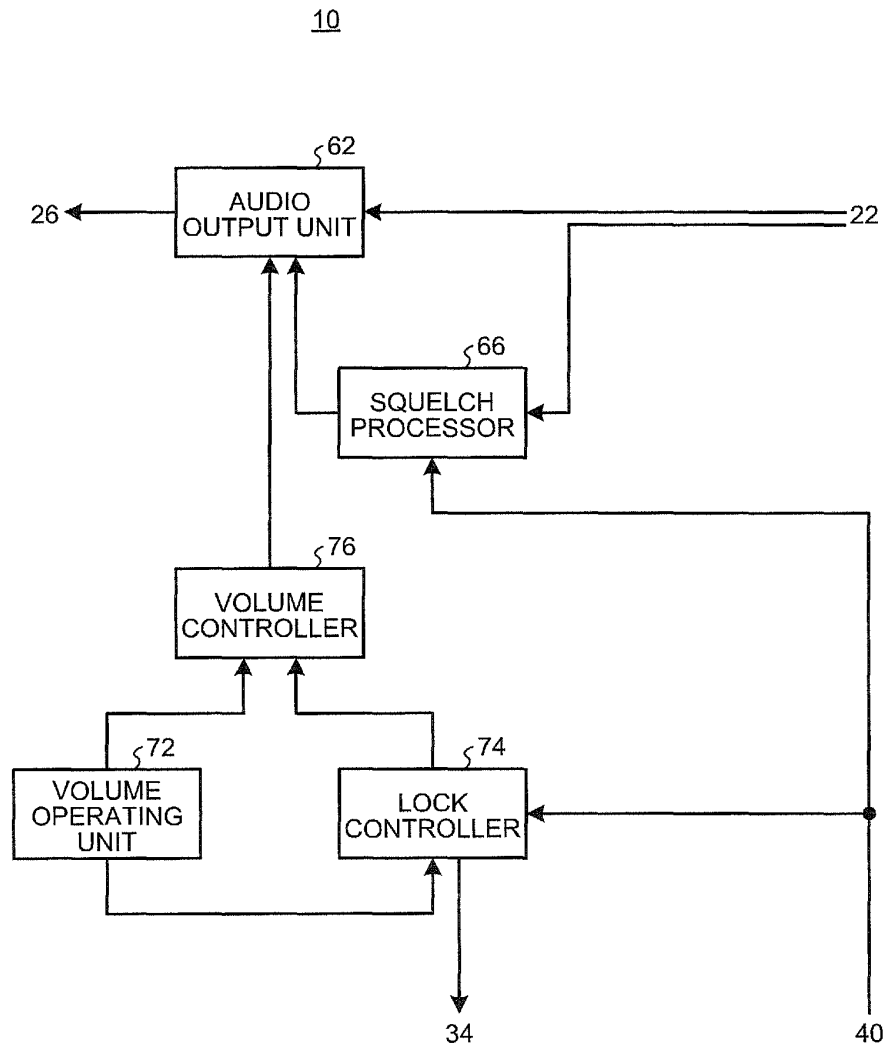
1/5

FIG.1



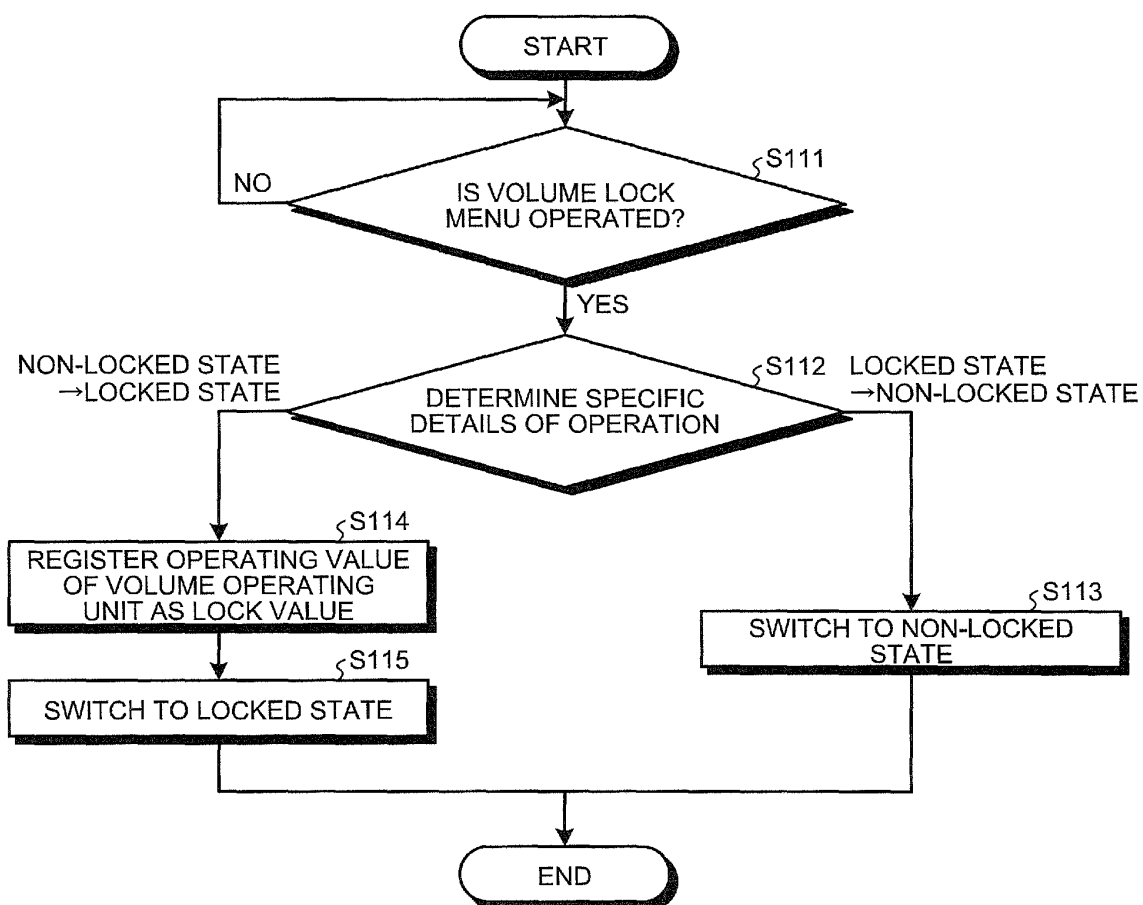
2/5

FIG.2



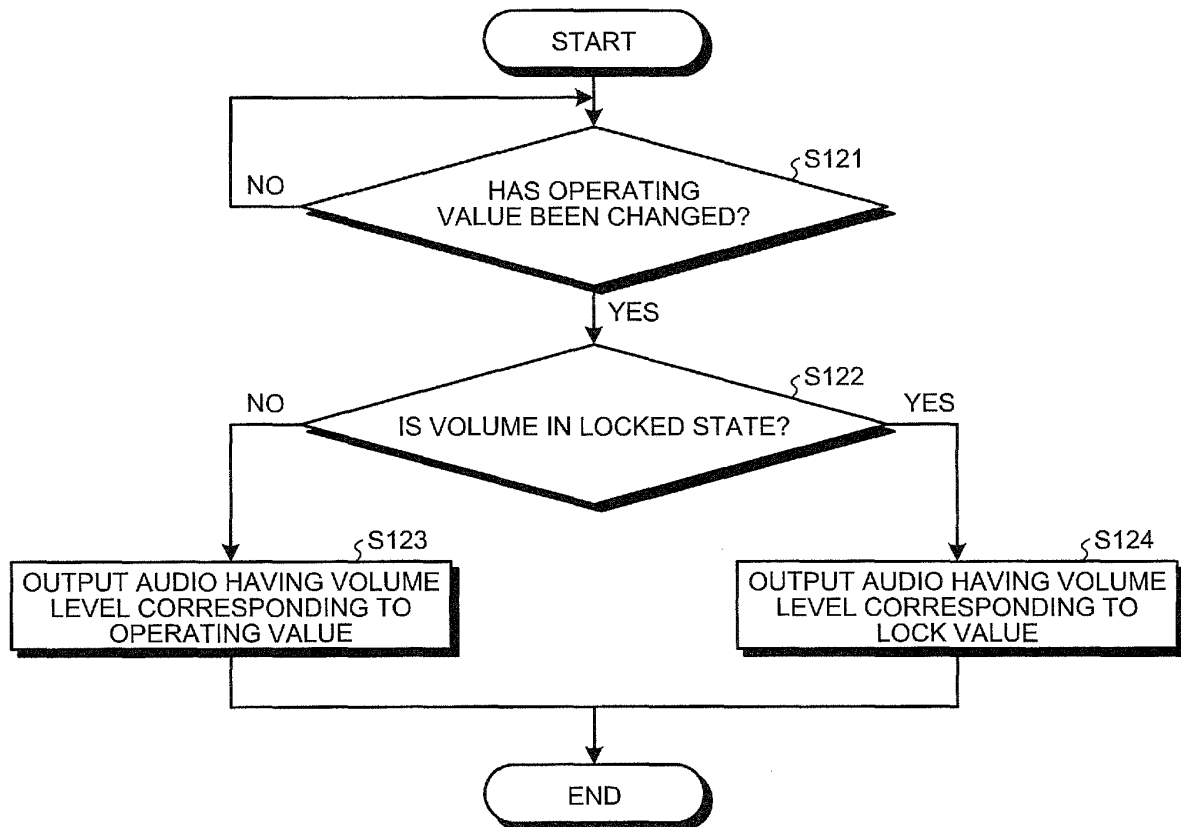
3/5

FIG.3



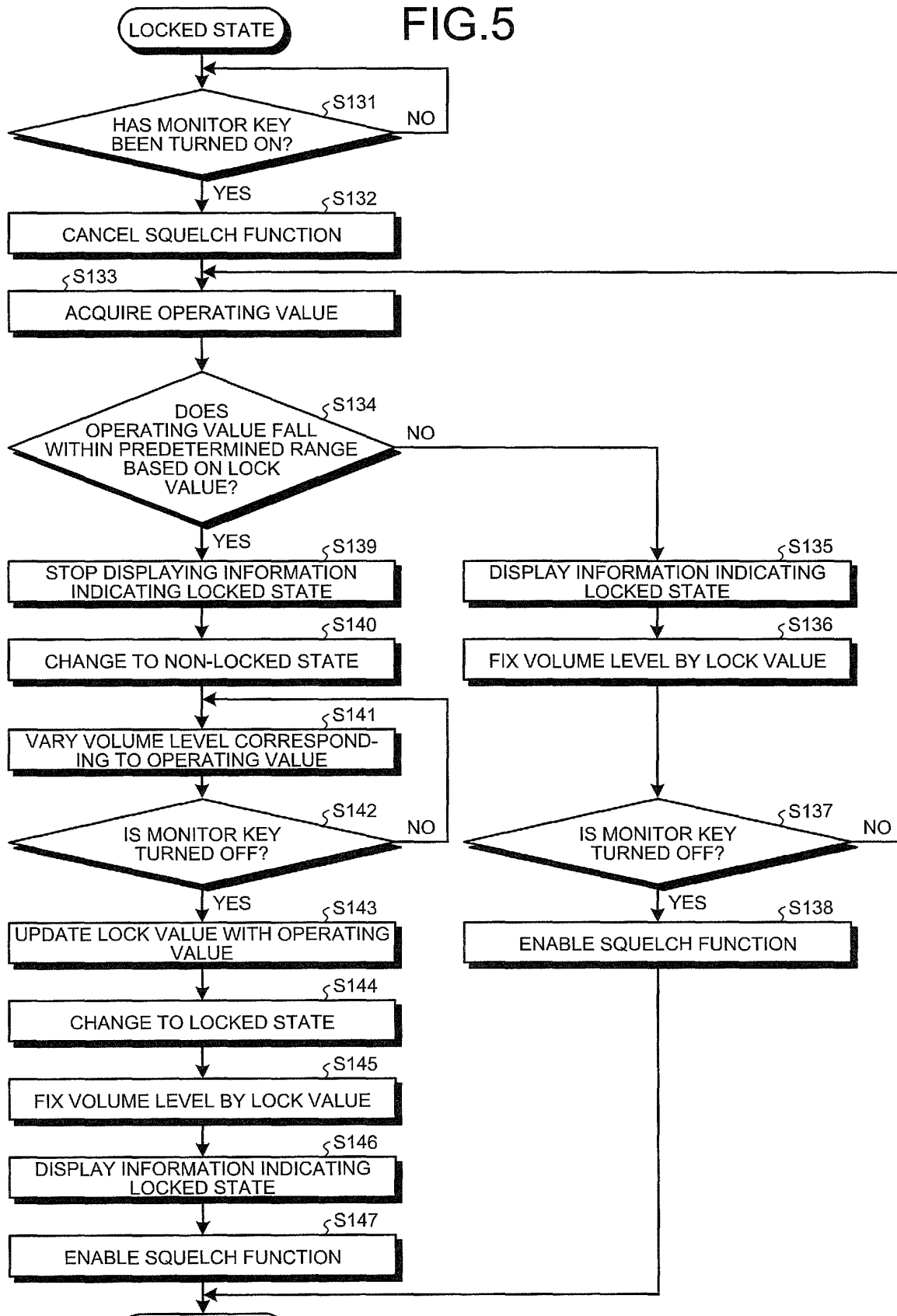
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FIG.4



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FIG.5



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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1		Remove	
Legal Name			
Prefix	Given Name	Middle Name	Family Name
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Residence Information (Select One) US Residency • Non US Residency Active US Military Service			
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City	Yokohama-shi, Kanagawa	State/Province	
Postal Code	221-0022	Country ⁱ	JP
Inventor 2		Remove	
Legal Name			
Prefix	Given Name	Middle Name	Family Name
	Kanji		Kuroiwa
Residence Information (Select One) US Residency • Non US Residency Active US Military Service			
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Mailing Address of Inventor:			
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Address 2	3-12, Moriyacho, Kanagawa-ku		
City	Yokohama-shi, Kanagawa	State/Province	
Postal Code	221-0022	Country ⁱ	JP
Inventor 3		Remove	
Legal Name			

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

Prefix	Given Name	Middle Name	Family Name	Suffix
	Hiroshi		Nakamura	
Residence Information (Select One) US Residency ☒ Non US Residency Active US Military Service				
City	Yokohama-shi, Kanagawa		Country of Residence ⁱ	JP

Mailing Address of Inventor:

Address 1	c/o Intellectual Property Dept., JVC KENWOOD Corp.			
Address 2	3-12, Moriyacho, Kanagawa-ku			
City	Yokohama-shi, Kanagawa	State/Province		
Postal Code	221-0022	Country ⁱ	JP	
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add				

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
☐ An Address is being provided for the correspondence information of this application.	
Customer Number	23623
Email Address	Add Email Remove Email

Application Information:

Title of the Invention	RECEIVING APPARATUS AND CONTROL METHOD		
Attorney Docket Number	SAJVP127US	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	5	Suggested Figure for Publication (if any)	1

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	23623		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78. When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)¹ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
2015-238210	JP	2015-12-07	
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
--

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1		Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		Clear	
☐ Assignee	☐ Legal Representative under 35 U.S.C. 117		☐ Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	JVC KENWOOD Corporation		
Mailing Address Information For Applicant:			
Address 1	3-12, Moriyacho, Kanagawa-ku		
Address 2			
City	Yokohama-shi, Kanagawa	State/Province	
Country	JP	Postal Code	221-0022
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			Add

Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

Assignee	1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.				☐
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country ⁱ		Postal Code		
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet must be signed by a patent practitioner if one or more of the applicants is a juristic entity (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Greg Turocy/		Date (YYYY-MM-DD)	2016-12-01
First Name	Gregory	Last Name	Turocy	Registration Number
				36952
Additional Signature may be generated within this form by selecting the Add button.				Add

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	SAJVP127US
		Application Number	
Title of Invention	RECEIVING APPARATUS AND CONTROL METHOD		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Docket No.

Amin, Turocy & Watson, LLP

**COMBINED DECLARATION AND ASSIGNMENT FOR U.S. PATENT
APPLICATION USING AN APPLICATION DATA SHEET**

DECLARATION

As a below named inventor, I hereby declare that:

I believe I am the original inventor or an original joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: RECEIVING APPARATUS AND CONTROL METHOD

the application of which is attached hereto unless the following is checked

_____ was filed on _____ as United States application Serial No. _____, or
as described and claimed in PCT International Application No. _____ filed
on _____ and amended on _____ (if any).

The above-identified application was made or authorized to be made by me.

Please direct all communications to the following address:

the address associated with Customer Number **23623**, and direct telephone calls to

Gregory Turocy of Amin, Turocy & Watson, LLP at 216-696-8730.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. Section 1001 by fine or imprisonment of not more than five (5) years, or both.

ASSIGNMENT

For good and valuable consideration received of the hereinafter named assignee, receipt of which is hereby acknowledged, the undersigned

First Inventor's Name: Kazuomi TACHIGI

Residence: Yokohama-shi, Kanagawa, Japan

Second Inventor's Name: Kanji KUROIWA

Residence: Yokohama-shi, Kanagawa, Japan

Third Inventor's Name: Hiroshi NAKAMURA

Residence: Yokohama-shi, Kanagawa, Japan

hereby sell and assign to JVC KENWOOD Corporation, a corporation of Japan, having a business address at 3-12, Moriyacho, Kanagawa-ku, Yokohama-shi, Kanagawa 221-0022 Japan, its successors and assigns, the entire right, title and interest, so far as concerns the United States and the Territories and Possessions thereof and all foreign countries, in and to the inventions titled above for which application for United States Letters Patent is executed by the undersigned on the date below and is being filed concurrently herewith, said application for United States Letters Patent, any and all other applications for Letters Patent on said inventions in countries foreign to the United

Docket No.

Amin, Turocy & Watson, LLP

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Amin, Turocy & Watson, LLP, 57th Floor - Key Tower, 127 Public Square, Cleveland, Ohio 44114.

Legal name of inventor: Kazuomi TACHIGI

Inventor's signature: Kazuomi Tachigi Date: 11/07/2016

Legal name of inventor: Kanji KUROIWA

Inventor's signature: Kanji Kuroiwa Date: 11/07/2016

Legal name of inventor: Hiroshi NAKAMURA

Inventor's signature: Hiroshi Nakamura Date: 11/07/2016

Doc Code: PA..

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PTO/AIA/82A (07-12)

Approved for use through 11/30/2014. OMB 0651-0035

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Application Number	
Filing Date	December 1, 2016
First Named Inventor	Tachigi et al
Title	RECEIVING APPARATUS AND CONTROL METHOD
Art Unit	
Examiner Name	
Attorney Docket Number	SAJVP127US

SIGNATURE of Applicant or Patent Practitioner

Signature	/Gregory Turocy/	Date	December 1, 2016
Name	Gregory Turocy	Telephone	216-696-8730
Registration Number	36,952		

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

☐ *Total of _____ forms are submitted.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/366,261	12/01/2016	2688	1600	SAJVP127US	8	2

CONFIRMATION NO. 7787

FILING RECEIPT



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23623
AMIN, TUROCY & WATSON, LLP
127 Public Square
57th Floor, Key Tower
CLEVELAND, OH 44114

Date Mailed: 12/14/2016

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

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Applicant(s)

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Power of Attorney: The patent practitioners associated with Customer Number 23623

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.)
JAPAN 2015-238210 12/07/2015

Permission to Access Application via Priority Document Exchange: Yes

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If Required, Foreign Filing License Granted: 12/12/2016

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/366,261**

Projected Publication Date: 06/08/2017

Non-Publication Request: No

Early Publication Request: No
Title

RECEIVING APPARATUS AND CONTROL METHOD

Preliminary Class

369

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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page 2 of 4

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/366,261	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	600
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720
TOTAL CLAIMS (37 CFR 1.16(i))	8	minus 20 = *				x 80 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *				x 420 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
			TOTAL			TOTAL	1600
* If the difference in column 1 is less than zero, enter "0" in column 2.							
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =		x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =		x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =		x =
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
				TOTAL ADD'L FEE		TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.							

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JAPAN PATENT OFFICE

別紙添付の書類に記載されている事項は下記の出願書類に記載されている事項と同一であることを証明する。

This is to certify that the annexed is a true copy of the following application as filed with this Office.

出 願 年 月 日
Date of Application: 2015年12月 7日

出 願 番 号
Application Number: 特願2015-238210

パリ条約による外国への出願
に用いる優先権の主張の基礎
となる出願の国コードと出願
番号
The country code and number
of your priority application,
to be used for filing abroad
under the Paris Convention, is

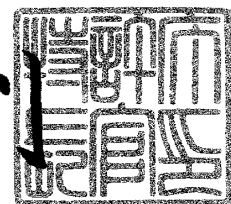
J P 2015-238210

出 願 人
Applicant(s): 株式会社JVCケンウッド

特許庁長官
Commissioner,
Japan Patent Office

2017年 1月30日

小宮義則



【書類名】	特許願
【整理番号】	P150217-01
【提出日】	平成27年12月 7日
【あて先】	特許庁長官殿
【国際特許分類】	H03G 3/02
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【代表者】	酒井 宏明
【手数料の表示】	
【予納台帳番号】	444695
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【物件名】	明細書 1
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【物件名】	要約書 1
【物件名】	図面 1
【包括委任状番号】	1507936

【書類名】明細書

【発明の名称】受信装置および制御方法

【技術分野】

【0001】

本発明は、受信装置および制御方法に関する。

【背景技術】

【0002】

携帯型の無線機は、一般に、音声の音量を固定する音量ロック機能を有する。これにより、無線機は、誤ってボリュームキーを操作してしまった場合であっても、意図しない大きな音量の音声は突然出力されてしまうことを回避することができる。

【0003】

特許文献1には、誤って動かされたボリュームキーを任意の時点の位置に自動復帰させる装置が記載されている。

【先行技術文献】

【特許文献】

【0004】

【特許文献1】特開平09-130173号公報

【発明の概要】

【発明が解決しようとする課題】

【0005】

ところで、従来の無線機では、音量をロックした後に音量を再設定する場合、ロック状態を一旦解除してからボリュームキーを操作し、その後、ロック状態に設定しなければならなかった。従って、従来の無線機では、ロックする音量を再設定するための操作が煩雑であった。また、従来の無線機では、ロック状態において誤ってボリュームキーが操作された場合、ロック状態を解除した途端に意図しない音量の音声は出力される。このため、従来の無線機では、音量をロックした後に音量を再設定する場合、ロック状態の解除直後に意図しない大きな音量の音声は出力されてしまう可能性があった。

【0006】

本発明は、上記に鑑みてなされたものであって、音量をロックした後に簡単な操作で音量の再設定をすることができ、再設定時に意図しない音量の音声は出力されることを防止する受信装置および制御方法を提供することを目的とする。

【課題を解決するための手段】

【0007】

上述した課題を解決し、目的を達成するために、本発明に係る受信装置は、音声信号に応じた音声は出力する音声出力部と、ユーザ操作に応じて、音声の音量を示す操作値を出力する音量操作部と、音声の音量を前記操作値に応じて変化可能な非ロック状態と、前記操作値を一定のロック値に固定したロック状態とを切り替えるロック管理部と、前記非ロック状態において前記操作値に応じた音量の音声は前記音声出力部から出力させ、前記ロック状態において、前記ロック値が示す音量の音声は前記音声出力部から出力させる音量制御部と、を備え、前記ロック管理部は、前記ロック状態において所定の操作部がオンとなった場合、前記操作値が前記ロック値から予め定められた範囲の値となつてから、前記所定の操作部がオフとなるまでの期間において、前記非ロック状態に変更し、前記非ロック状態に変更した後に前記所定の操作部がオフとなった場合、前記操作値を前記ロック値として更新して、前記ロック状態に変更する。

【発明の効果】

【0008】

本発明によれば、音声の音量を一定に固定するロック状態において、音量を容易に再設定することができる。

【図面の簡単な説明】

【0009】

【図１】図１は、実施形態に係る無線機のハードウェア構成を示す図である。

【図２】図２は、実施形態に係る無線機の音声出力のための機能構成を示す図である。

。【図３】図３は、非ロック状態とロック状態とを切り替える処理を示すフローチャートである。

【図４】図４は、音量操作部が操作された場合の処理を示すフローチャートである。

【図５】図５は、ロック値を変更する場合の処理を示すフローチャートである。

【発明を実施するための形態】

【００１０】

図１は、実施形態に係る無線機１０のハードウェア構成を示す図である。無線機１０は、音声信号を無線送信する送信装置および音声信号を無線受信する受信装置の機能を有する。

【００１１】

無線機１０は、アンテナ２０と、送受信回路２２と、マイクロホン２４と、スピーカ２６と、信号処理回路２８と、主制御回路３０と、不揮発性メモリ３２と、ディスプレイ３４と、ボリュームキー３６と、ＰＴＴ（Push To Talk）スイッチ３８と、モニターキー４０と、操作キー群４２とを備える。

【００１２】

アンテナ２０は、電磁波を空中に放射し、また、空中の電磁波を取得する。送受信回路２２は、送信時において、信号処理回路２８から変調信号を取得し、取得した変調信号を搬送波に変調して被変調信号つまり送信信号を生成する。そして、送受信回路２２は、送信時において、送信信号をアンテナ２０を介して他の装置（他の無線機１０）または基地局等へ送信する。また、送受信回路２２は、受信時において、アンテナ２０を介して被変調信号を他の装置または基地局等から受信し、受信した被変調信号つまり受信信号を復調して復調信号を生成する。そして、送受信回路２２は、受信時において、復調信号を信号処理回路２８へ与える。

【００１３】

マイクロホン２４は、周囲の音を集音して電気信号に変換して音声信号を出力する。スピーカ２６は、音声信号を振動に変換して外部に音を放音する。

【００１４】

信号処理回路２８は、送信時において、マイクロホン２４により出力された音声信号に帯域制限等の所定の処理を行い変調信号を生成し、生成した変調信号を送受信回路２２に与える。信号処理回路２８は、受信時において、送受信回路２２により出力された復調信号に帯域制限等の処理を行い音声信号を抽出し、抽出した音声信号をスピーカ２６に与える。なお、信号処理回路２８は、ＡＤ／ＤＡ変換回路を有してデジタルで信号処理を実行してもよいし、アナログで信号処理を実行してもよい。

【００１５】

主制御回路３０は、無線機１０の全体を制御する。主制御回路３０は、例えば、ＣＰＵ（Central Processing Unit）、ＲＯＭ（Read Only Memory）およびＲＡＭ（Random Access Memory）等を有する。主制御回路３０は、予め組み込まれたプログラムを実行して、信号処理回路２８等の各部を制御する。不揮発性メモリ３２は、例えばフラッシュメモリ等であり、主制御回路３０により実行されるプログラムおよび送受信のために用いられる各種の設定値を記憶する。

【００１６】

ディスプレイ３４は、筐体の主面等に設けられ、ユーザに対して情報を表示する。主制御回路３０は、ディスプレイ３４を制御して各種の情報をディスプレイ３４に表示させる。

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【００１７】

ボリュームキー３６は、受信時において出力する音声の音量をユーザが操作するための装置である。ボリュームキー３６は、筐体に設けられた機械式の操作装置である。ボリュ

ームキー３６は、例えば、回転式の変抵抗器であり、回転軸の位置が音量を表す。主制御回路３０は、ボリュームキー３６に電圧を印加し、回転位置に応じた電圧値をＡＤ変換することにより検出する。そして、主制御回路３０は、検出した電圧値を、ボリュームキー３６の回転位置に応じた操作値として取得する。

【００１８】

ＰＴＴスイッチ３８は、送信と受信とを切り替えるためのスイッチである。ＰＴＴスイッチ３８は、例えばユーザが押している場合にオン、ユーザが押していない場合にはオフとなるモーメンタリ動作をするスイッチである。主制御回路３０は、ＰＴＴスイッチ３８がオンの場合に送信処理を実行させ、ＰＴＴスイッチがオフの場合に受信処理を実行させる。

【００１９】

モニターキー４０は、後述するスケルチ機能を解除するためのスイッチである。モニターキー４０は、例えばユーザが押している場合にオン、ユーザが押していない場合にはオフとなるモーメンタリ動作をするスイッチである。スケルチ機能とは、受信時において、有効な受信信号が含まれない場合音声信号の出力を停止させ、有効な受信信号が含まれる場合に音声出力させる機能である。モニターキー４０は、受信時において有効な受信信号が含まれない場合であっても、オンにすることにより音声信号をスピーカ２６から出力することができる。

【００２０】

操作キー群４２は、無線機１０を操作するための複数のキーである。操作キー群４２は、例えば、電源ボタン、チャンネル選択スイッチおよび状態切替スイッチ等を含む。主制御回路３０は、操作キー群４２に対してされた操作を検出して無線機１０を制御する。

【００２１】

図２は、実施形態に係る無線機１０の音声出力のための機能構成を示す図である。無線機１０は、音声出力部６２と、スケルチ処理部６６と、音量操作部７２と、ロック管理部７４と、音量制御部７６とを備える。

【００２２】

音声出力部６２は、送受信回路２２により出力された復調信号を受け取る。音声出力部６２は、復調信号から音声信号を抽出し、抽出した音声信号をスピーカ２６に与える。音声出力部６２は、信号処理回路２８により実現される。

【００２３】

スケルチ処理部６６は、スケルチ機能を実行する。スケルチ機能は大きく分けて２つの方法がある。第１の方法はノイズスケルチと称される方法であり、復調帯域外のノイズを検出し、ノイズが所定のレベル以上の場合には復調信号の出力を停止する。第１の方法では、所定の受信信号強度以上の場合には復調帯域外のノイズも抑圧されるため、ノイズの検出レベルが下がったことを検出して復調信号の出力を許可する。第２の方法は、トーンスケルチやコードスケルチと称される方法であり、変調信号に所定のトーン信号やデジタルコード信号といった制御信号による変調がなされ、それらの制御信号を検出した場合に復調信号の出力を許可する。第２の方法は、受信信号から所定のトーンやコードといった制御信号が検出できない場合は、復調信号の出力を停止する。

【００２４】

すなわち、スケルチ処理部６６は、受信信号が所定のレベル以下の場合、もしくは受信信号にスケルチを解除する制御信号が含まれない場合、音声出力部６２による音声の出力を停止させる。スケルチ処理部６６は、受信信号にスケルチを解除する制御信号が含まれるか否かをどのような方法で検出してもよい。このようにスケルチ処理部６６は、無信号時のホワイトノイズや不要な信号の復調音声の出力を抑えることができる。

【００２５】

また、スケルチ処理部６６は、ユーザの操作に応じて、スケルチ機能を解除する。すなわち、スケルチ処理部６６は、ユーザの操作に応じて、受信信号の有無、もしくは制御信号が含まれているか否かに関わらず、音声出力部６２により音声出力させる。例えば、

スケルチ処理部 66 は、モニターキー 40 がオンの場合に、スケルチ機能を解除する。従って、無線機 10 は、モニターキー 40 がオンの場合には、受信信号が存在しない場合であっても、ホワイトノイズ等の音声を出力して音量の調整をさせることができる。スケルチ処理部 66 は、信号処理回路 28 および主制御回路 30 により実現される。

【0026】

音量操作部 72 は、ユーザ操作に応じて、音声の音量を示す操作値を出力する。例えば、音量操作部 72 は、ボリュームキー 36 と主制御回路 30 とにより実現される。ボリュームキー 36 が例えば回転式の 3 端子型の可変抵抗器である場合、ボリュームキー 36 における抵抗の両端に所定電圧が印加される。主制御回路 30 は、ボリュームキー 36 における移動端子の電圧をアナログデジタル変換により検出し、検出した電圧に基づきボリュームキー 36 の回転位置に応じた値を検出する。そして、主制御回路 30 は、検出した回転位置に応じた値を、操作値として出力する。

【0027】

ロック管理部 74 は、ユーザの操作に応じて、非ロック状態とロック状態とを切り替える。非ロック状態は、音声の音量を音量制御部 76 が出力した操作値に応じて変化可能な状態である。ロック状態は、音声の音量を一定に固定した状態である。例えば、ロック管理部 74 は、操作キー群 42 に対する操作に応じて、非ロック状態からロック状態へ、または、ロック状態から非ロック状態へ切り替える。

【0028】

音量制御部 76 は、音声出力部 62 から出力する音声の音量を制御する。具体的には、音量制御部 76 は、非ロック状態において、音量操作部 72 が出力した操作値に応じた音量の音声を音声出力部 62 から出力させる。すなわち、音量制御部 76 は、非ロック状態において、音量操作部 72 の操作値に応じて、音声の音量を変化させる。また、音量制御部 76 は、ロック状態において、ロック管理部 74 が登録したロック値が示す音量の音声を音声出力部 62 から出力させる。すなわち、音量制御部 76 は、ロック状態において、音量操作部 72 が出力する操作値に関わらず、音声の音量を固定する。

【0029】

ここで、ロック管理部 74 は、ロック状態において出力すべき音声の音量を示すロック値を登録する。具体的には、ロック管理部 74 は、ユーザの操作に応じて非ロック状態からロック状態に変更された場合、変更操作時における、音量操作部 72 の操作値をロック値として登録する。

【0030】

ロック管理部 74 は、音量操作部 72 が出力するどのような操作値も、ロック値として登録することができる。例えば、ロック管理部 74 は、無音を表す操作値から最大音量を表す操作値まで、何れの操作値もロック値として登録することができる。従って、音量制御部 76 は、ロック状態において、音声は無音で固定させることもできるし、音声を最大音量で固定させることもできる。

【0031】

また、ロック管理部 74 は、ロック状態においてユーザにより予め定められた手順で操作がされた場合、登録しているロック値を更新する。具体的には、次のような手順でロック値を更新する。

【0032】

まず、ロック状態において所定の操作部がオンとなった場合、ロック管理部 74 は、所定の操作部がオンとなってから、音量操作部 72 が出力する操作値がロック値から予め定められた範囲の値となるまでの期間、ロック状態を維持する。この場合、ロック管理部 74 は、所定の操作部がオンとなってから操作値がロック値から予め定められた範囲の値となるまでの期間、ロック中であることを知らせる情報をディスプレイ 34 に表示させてもよい。

【0033】

続いて、ロック管理部 74 は、操作値がロック値から予め定められた範囲の値となって

から、所定の操作部がオフとなるまでの期間において、非ロック状態に変更する。なお、ロック状態において所定の操作部がオンとなった時点で、操作値がロック値から予め定められた範囲の値となっている場合には、所定の操作部がオンとなった時点で、ロック状態から非ロック状態に変更する。

【0034】

続いて、非ロック状態に変更した後に所定の操作部がオフとなった場合、ロック管理部74は、所定の操作部がオフとなった時点における音量操作部72が出力する操作値をロック値として更新して、ロック状態に変更する。これにより、ロック管理部74は、ロック値を更新することができる。

【0035】

なお、所定の操作部は、本例においては、モニターキー40である。従って、ロック管理部74は、モニターキー40がオンとなり、受信信号に有効な音声信号が含まれているか否かに関わらず、音声出力部62が音声を出力させている状態において、ロック値を変更する。これにより、受信信号が存在する場合にはその有効な音声出力され、受信信号がない場合であってもホワイトノイズを出力されるので、ロック管理部74は、ユーザに音声の音量を確認させながら固定したい音量を再設定させることができる。

【0036】

図3は、非ロック状態とロック状態とを切り替える処理を示すフローチャートである。ロック管理部74は、非ロック状態とロック状態とを切り替える場合、図3に示すフローチャートに従った処理を実行する。

【0037】

まず、ステップS111において、ロック管理部74は、ユーザにより操作キー群42が操作されて、音量ロックの設定を変更するためのユーザインターフェイスである音量ロックメニューが操作されたか否かを判断する。ロック管理部74は、音量ロックメニューが操作されていない場合には（S111のNo）、処理をステップS111で待機し、音量ロックメニューが操作された場合には（S111のYes）、処理をステップS112に進める。

【0038】

ステップS112において、ロック管理部74は、操作内容を判断する。ロック管理部74は、ステップS112でロック状態から非ロック状態への変更操作がされたと判断した場合には、処理をステップS113に進める。ステップS113において、ロック管理部74は、ロック状態から非ロック状態に変更する。例えば、ロック管理部74は、ロック状態か否かを表す所定のフラグを1から0に変更する。ロック管理部74は、ステップS113を終えると、本フローを終了する。

【0039】

また、ロック管理部74は、ステップS112で非ロック状態からロック状態への変更操作がされたと判断した場合には、処理をステップS114に進める。ステップS114において、ロック管理部74は、音量操作部72が出力する操作値を取得し、取得した操作値をロック値として登録する。例えば、ロック管理部74は、所定の記憶領域に操作値を記憶させる。続いて、ステップS115において、ロック管理部74は、非ロック状態からロック状態に変更する。例えば、ロック管理部74は、ロック状態か否かを表す所定のフラグを0から1に変更する。ロック管理部74は、ステップS115を終えると、本フローを終了する。

【0040】

以上のように、ロック管理部74は、ユーザの操作に応じて、非ロック状態とロック状態とを切り替えることができる。さらに、ロック管理部74は、ユーザの操作に応じて非ロック状態からロック状態に変更された場合、変更操作時における、音量操作部72の操作値をロック値として登録することができる。

【0041】

図4は、音量操作部72が操作された場合の処理を示すフローチャートである。音量制

御部76は、音量操作部72が操作された場合、図4に示すフローチャートに従った処理を実行する。

【0042】

まず、ステップS121において、音量制御部76は、音量操作部72が操作されたことにより、音量操作部72から出力される操作値が変更したか否かを判断する。音量制御部76は、操作値が変更していない場合には（S121のNo）、処理をステップS121で待機し、操作値が変更した場合には（S121のYes）、処理をステップS122に進める。

【0043】

ステップS122において、音量制御部76は、ロック状態か否かを判断する。例えば、音量制御部76は、ロック状態か否かを表す所定のフラグが1であるか否かを判断する。

【0044】

音量制御部76は、ロック状態ではない場合（S122のNo）、つまり、非ロック状態である場合、処理をステップS123に進める。ステップS123において、音量制御部76は、音量操作部72が出力した操作値に応じた音量の音声を音声出力部62から出力させる。例えば、音量制御部76は、操作値を音声出力部62に設定して、音声出力部62の音量の増幅率を変更させる。音量制御部76は、ステップS123を終えると、本フローを終了する。

【0045】

音量制御部76は、ロック状態である場合（S122のYes）、処理をステップS124に進める。ステップS124において、音量制御部76は、ロック管理部74により登録されたロック値に応じた音量の音声を音声出力部62から出力させる。例えば、音量制御部76は、所定の記憶領域からロック値を読み出し、読み出したロック値を音声出力部62に設定して、音声出力部62の音量の増幅率を設定させる。音量制御部76は、ステップS124を終えると、本フローを終了する。

【0046】

以上のように、音量制御部76は、非ロック状態において、音量操作部72が出力した操作値に応じた音量の音声を音声出力部62から出力させることができる。すなわち、音量制御部76は、非ロック状態において、ユーザによる音量操作部72の操作に応じて、出力される音声の音量を変更することができる。

【0047】

音量制御部76は、ロック状態において、登録したロック値が示す音量の音声を音声出力部62から出力させることができる。すなわち、音量制御部76は、ロック状態において、ユーザが音量操作部72を操作した場合であっても、出力される音声を、登録したロック値に応じた音量に固定することができる。

【0048】

図5は、ロック値を変更する場合の処理を示すフローチャートである。スケルチ処理部66およびロック管理部74は、ロック状態において、既に登録されているロック値を変更する場合、図5に示すフローチャートに従った処理を実行する。

【0049】

まず、ステップS131において、スケルチ処理部66およびロック管理部74は、モニターキー40がオンされたか否かを判断する。スケルチ処理部66およびロック管理部74は、モニターキー40がオンされていない場合には（S131のNo）、処理をステップS131で待機し、モニターキー40がオンされた場合には（S131のYes）、処理をステップS132に進める。

【0050】

ステップS132において、スケルチ処理部66は、スケルチ機能を解除する。これにより、音声出力部62は、受信信号に有効な音声信号が含まれているか否かに関わらず、音声を出力することができる。従って、ユーザは、後において、ホワイトノイズ等の音量

を確認しながらロック値を変更することができる。なお、ステップS 1 3 2の時点では、ロック状態であるので、音声出力部6 2は、ロック管理部7 4により登録されたロック値に応じた音量の音声を出力する。

【0051】

続いて、ステップS 1 3 3において、ロック管理部7 4は、音量操作部7 2が出力した操作値を取得する。続いて、ステップS 1 3 4において、ロック管理部7 4は、取得した操作値が、登録されたロック値から予め定められた範囲内の値か否かを判断する。ロック値から予め定められた範囲は、例えば、ロック値から所定の第1値を減じた値から、ロック値から所定の第2値を加算した値までの範囲である。より具体的には、ロック値から予め定められた範囲は、ロック値の95%の値から、ロック値の105%の値までの範囲等である。また、ロック値から予め定められた範囲は、例えば、ロック値より小さい範囲であってもよい。

【0052】

ステップS 1 3 4で操作値がロック値から予め定められた範囲内の値ではないと判断された場合（ステップS 1 3 4のNo）、ロック管理部7 4は、処理をステップS 1 3 5に進める。ステップS 1 3 5において、ロック管理部7 4は、ディスプレイ3 4にロック中であることを知らせる情報を表示させる。続いて、ステップS 1 3 6において、ロック管理部7 4は、ロック状態を維持する。これにより、音量制御部7 6は、音声出力部6 2から出力される音声の音量を、現在登録されているロック値に固定することができる。

【0053】

続いて、ステップS 1 3 7において、スケルチ処理部6 6およびロック管理部7 4は、モニターキー4 0がオフされたか否かを判断する。スケルチ処理部6 6およびロック管理部7 4は、モニターキー4 0がオフされていない場合には（S 1 3 7のNo）、すなわち、モニターキー4 0がオンされたまま維持されている場合には、処理をステップS 1 3 3に戻して、処理をステップS 1 3 3から繰り返す。

【0054】

ステップS 1 3 3からステップS 1 3 7を繰り返すことにより、ロック管理部7 4は、モニターキー4 0がオンとなってから、音量操作部7 2が出力する操作値がロック値から予め定められた範囲の値となるまでの期間、ロック状態を維持することができる。これにより、ロック管理部7 4は、ユーザにより音量操作部7 2が操作された場合であっても、操作値がロック値から予め定められた範囲の値とならなければ、ロック状態が維持されるので、突然大音量が出力されるようなことを無くすることができる。さらに、ロック管理部7 4は、モニターキー4 0がオンとなってから操作値がロック値から予め定められた範囲の値となるまでの期間、ロック中であることを知らせる情報をディスプレイ3 4に表示させることができる。これにより、ロック管理部7 4は、音量操作部7 2を操作しても音量が変化しないことをユーザに知らせることができる。

【0055】

また、スケルチ処理部6 6は、ステップS 1 3 7においてモニターキー4 0がオフされた場合には（S 1 3 7のNo）、処理をステップS 1 3 8に進める。ステップS 1 3 8において、スケルチ処理部6 6は、スケルチ機能を復帰させる。これにより、ロック管理部7 4は、ロック値を変更せずに、ロック値の変更処理を終了させることができる。スケルチ処理部6 6およびロック管理部7 4は、ステップS 1 3 8の処理を終えると、本フローを終了する。

【0056】

一方、ステップS 1 3 4で操作値がロック値から予め定められた範囲内の値であると判断された場合（ステップS 1 3 4のYes）、ロック管理部7 4は、処理をステップS 1 3 9に進める。ステップS 1 3 9において、ロック管理部7 4は、ロック中であることを知らせる情報をディスプレイ3 4に表示していた場合には、その情報の表示を消去させる。続いて、ステップS 1 4 0において、ロック管理部7 4は、非ロック状態に変更する。

【0057】

続いて、ステップS 1 4 1において、音量制御部7 6は、音声出力部6 2から出力される音声の音量を、音量操作部7 2が出力した操作値に応じて変更する。続いて、ステップS 1 4 2において、スケルチ処理部6 6およびロック管理部7 4は、モニターキー4 0がオフされたか否かを判断する。スケルチ処理部6 6およびロック管理部7 4は、モニターキー4 0がオフされていない場合には（S 1 4 1のNo）、すなわち、モニターキー4 0がオンされたまま維持されている場合には、処理をステップS 1 4 1に戻して、ステップS 1 4 1およびステップS 1 4 2の処理を繰り返す。

【0058】

ステップS 1 4 1からステップS 1 4 2を実行することにより、ロック管理部7 4は、操作値がロック値から予め定められた範囲の値となつてから、モニターキー4 0がオフとなるまでの期間、非ロック状態として、音声出力部6 2から出力される音声の音量を音量操作部7 2が出力した操作値に応じて変更させ続けることができる。このように、ロック管理部7 4は、操作値がロック値から予め定められた範囲の値となつた後には、ユーザによる音量操作部7 2の操作に応じた音量の音声を出力させることができる。

【0059】

ロック管理部7 4は、モニターキー4 0がオフされた場合には（S 1 4 1のYes）、処理をステップS 1 4 3に進める。ステップS 1 4 3において、ロック管理部7 4は、音量操作部7 2が出力する現在の操作値を、ロック値として登録する。続いて、ステップS 1 4 4において、ロック管理部7 4は、非ロック状態からロック状態に変更する。続いて、ステップS 1 4 5において、音量制御部7 6は、音声出力部6 2から出力される音声の音量を、ロック値が示す音量に固定する。続いて、ステップS 1 4 6において、ロック管理部7 4は、ディスプレイ3 4にロック中であることを知らせる情報を表示させる。

【0060】

ステップS 1 4 3からステップS 1 4 6を実行することにより、非ロック状態に変更した後にモニターキー4 0がオフとなつた場合、ロック管理部7 4は、モニターキー4 0がオフとなつた時点における音量操作部7 2が出力する操作値をロック値として更新して、ロック状態に変更することができる。これにより、ロック管理部7 4は、ロック値を容易に変更することができる。

【0061】

そして、ステップS 1 4 7において、スケルチ処理部6 6は、スケルチ機能を復帰させる。スケルチ処理部6 6およびロック管理部7 4は、ステップS 1 4 7の処理を終えると、本フローを終了する。

【0062】

以上のように、本実施形態に係る無線機1 0は、ロック状態において所定の操作部がオンとなつた場合、所定の操作部がオンとなつてから、音量操作部7 2が出力する操作値がロック値から予め定められた範囲の値となるまでの期間、ロック状態を維持する。これにより、無線機1 0は、ユーザにより音量操作部7 2が操作された場合であっても、操作値がロック値から予め定められた範囲の値とならなければ、ロック状態が維持して、突然大音量が出力されるようなことを無くすることができる。

【0063】

さらに、本実施形態に係る無線機1 0は、操作値がロック値から予め定められた範囲の値となつてから、所定の操作部がオフとなるまでの期間、非ロック状態に変更する。これにより、無線機1 0は、操作値がロック値から予め定められた範囲の値となつた後に、音量操作部7 2の操作に応じた音量の音声を出力させることができる。よって、無線機1 0は、ユーザに対して、音量を確認しながら周囲環境の状況に応じた音量を再設定させることができる。

【0064】

そして、無線機1 0は、所定の操作部がオフとなつた場合、その時点における操作値をロック値に更新して、非ロック状態からロック状態に変更する。これにより、無線機1 0は、容易に、ロック値を変更させることができる。

【0065】

以上の実施形態は、例として提示したものであり、発明の範囲を限定することは意図していない。これら新規な実施形態は、その他の様々な形態で実施されることが可能であり、発明の要旨を逸脱しない範囲で、種々の省略、置き換え、変更を行うことができる。

【符号の説明】

【0066】

- 10 無線機
- 20 アンテナ
- 22 送受信回路
- 24 マイクロホン
- 26 スピーカ
- 28 信号処理回路
- 30 主制御回路
- 32 不揮発性メモリ
- 34 ディスプレイ
- 36 ボリュームキー
- 38 PTTスイッチ
- 40 モニターキー
- 42 操作キー群
- 62 音声出力部
- 66 スケルチ処理部
- 72 音量操作部
- 74 ロック管理部
- 76 音量制御部

【書類名】特許請求の範囲

【請求項 1】

音声信号に応じた音声を出力する音声出力部と、
ユーザ操作に応じて、音声の音量を示す操作値を出力する音量操作部と、
音声の音量を前記操作値に応じて変化可能な非ロック状態と、前記操作値を一定のロック値に固定したロック状態とを切り替えるロック管理部と、
前記非ロック状態において前記操作値に応じた音量の音声の前記音声出力部から出力させ、前記ロック状態において、前記ロック値が示す音量の音声の前記音声出力部から出力させる音量制御部と、
を備え、
前記ロック管理部は、
前記ロック状態において所定の操作部がオンとなった場合、前記操作値が前記ロック値から予め定められた範囲の値となつてから、前記所定の操作部がオフとなるまでの期間において、前記非ロック状態に変更し、
前記非ロック状態に変更した後に前記所定の操作部がオフとなった場合、前記操作値を前記ロック値として更新して、前記ロック状態に変更する
受信装置。

【請求項 2】

前記ロック管理部は、前記ロック状態において前記所定の操作部がオンとなった場合、前記所定の操作部がオンとなつてから前記操作値が前記ロック値から予め定められた範囲の値となるまでの期間、前記ロック状態を維持する
請求項 1 に記載の受信装置。

【請求項 3】

前記ロック管理部は、前記ロック状態において前記所定の操作部がオンとなった場合、前記所定の操作部がオンとなつてから前記操作値が前記ロック値から予め定められた範囲の値となるまでの期間、ロック中であることを知らせる情報を表示させる
請求項 2 に記載の受信装置。

【請求項 4】

前記ロック管理部は、ユーザの操作に応じて前記非ロック状態から前記ロック状態に変更された場合、変更操作時における前記操作値を前記ロック値として登録する
請求項 1 から 3 の何れか 1 項に記載の受信装置。

【請求項 5】

前記ロック値から予め定められた範囲は、前記ロック値から所定の第 1 値を減じた値から、前記ロック値から所定の第 2 値を加算した値までの範囲である
請求項 1 から 4 の何れか 1 項に記載の受信装置。

【請求項 6】

前記予め定められた範囲は、前記ロック値より小さい範囲である
請求項 1 から 4 の何れか 1 項に記載の受信装置。

【請求項 7】

前記音声信号が変調された受信信号を受信し、前記受信信号を復調して前記音声信号を生成する受信部と、
前記受信信号が所定のレベル以下の場合、もしくは前記受信信号に所定の制御信号が含まれない場合、前記音声出力部による音声の出力を停止させるスケルチ処理部をさらに備え、
前記所定の操作部は、前記スケルチ処理部の機能をオフするためのモニターキーであり、
前記スケルチ処理部は、前記モニターキーがオンとなった場合、前記受信信号の有無、もしくは前記制御信号が含まれているか否かに関わらず、前記音声出力部により音声の出力させる
請求項 1 から 6 の何れか 1 項に記載の受信装置。

【請求項 8】

前記音量操作部は、機械式の操作装置を含む
請求項 1 から 7 の何れか 1 項に記載の受信装置。

【請求項 9】

音声信号に応じた音声を出力する音声出力部と、
ユーザ操作に応じて、音声の音量を示す操作値を出力する音量操作部と、
音声の音量を前記操作値に応じて変化可能な非ロック状態において前記操作値に応じた
音量の音声の前記音声出力部から出力させ、前記操作値を一定のロック値に固定したロッ
ク状態において、前記ロック値が示す音量の音声の前記音声出力部から出力させる音量制
御部と、
を備える受信装置の制御方法であって、
前記ロック状態において所定の操作部がオンとなった場合、前記操作値が前記ロック値
から予め定められた範囲の値となってから、前記所定の操作部がオフとなるまでの期間に
おいて、前記非ロック状態に変更し、
前記非ロック状態に変更した後に前記所定の操作部がオフとなった場合、前記操作値を
前記ロック値として更新して、前記ロック状態に変更する
制御方法。

【書類名】要約書

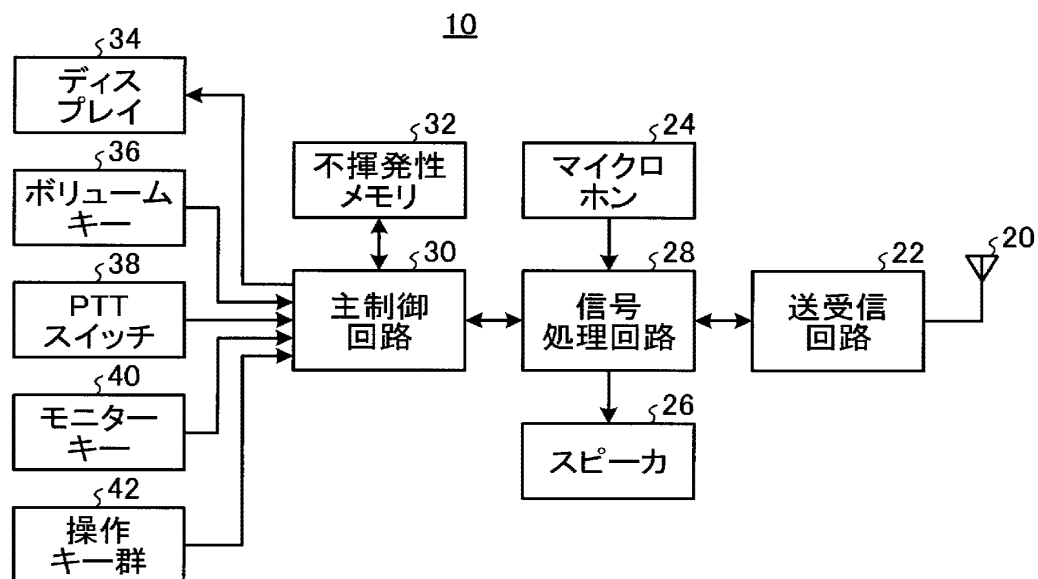
【要約】

【課題】音声の音量を一定に固定するロック状態において音量を容易に再設定することができる。

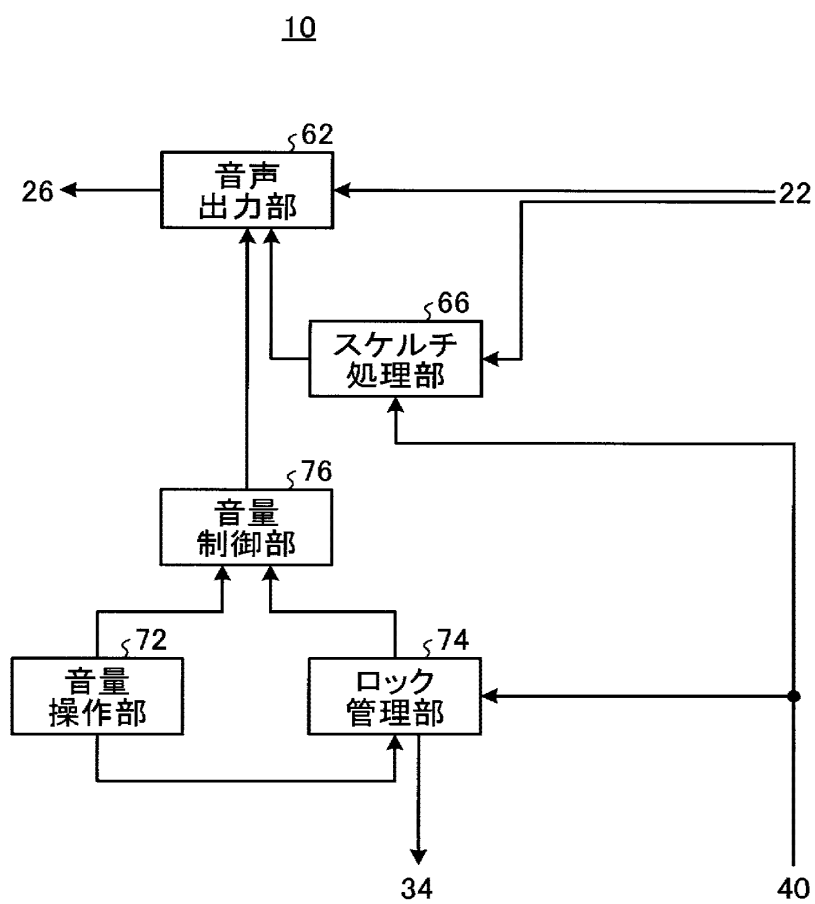
【解決手段】実施形態に係る受信装置は、音声出力部と、音量操作部と、音声の音量を操作値に応じて変化可能な非ロック状態と操作値を一定のロック値に固定したロック状態とを切り替えるロック管理部と、非ロック状態において操作値に応じた音量の音声を音声出力部から出力させ、ロック状態において、ロック値が示す音量の音声を音声出力部から出力させる音量制御部とを備え、ロック管理部は、ロック状態において所定の操作部がオンとなった場合、操作値がロック値から予め定められた範囲の値となってから、所定の操作部がオフとなるまでの期間において、非ロック状態に変更し、非ロック状態に変更した後、に所定の操作部がオフとなった場合、操作値をロック値として更新して、ロック状態に変更する。

【選択図】図2

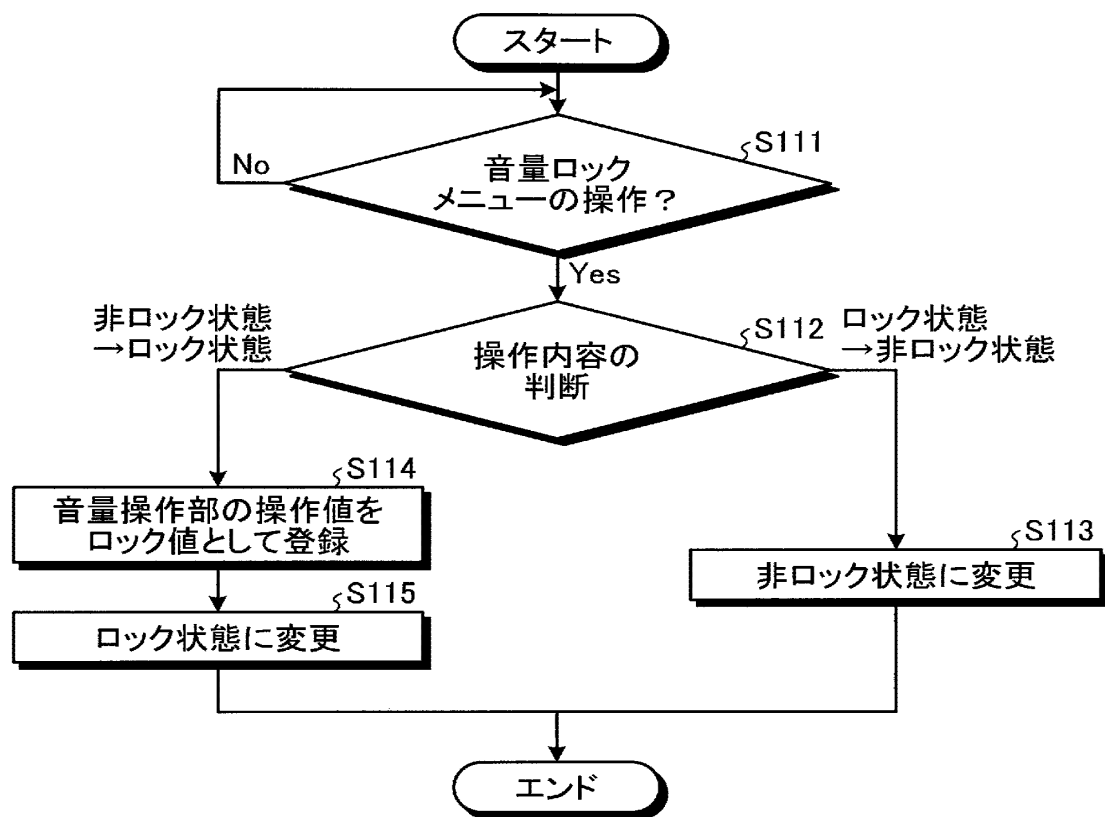
【書類名】 図面
【図 1】



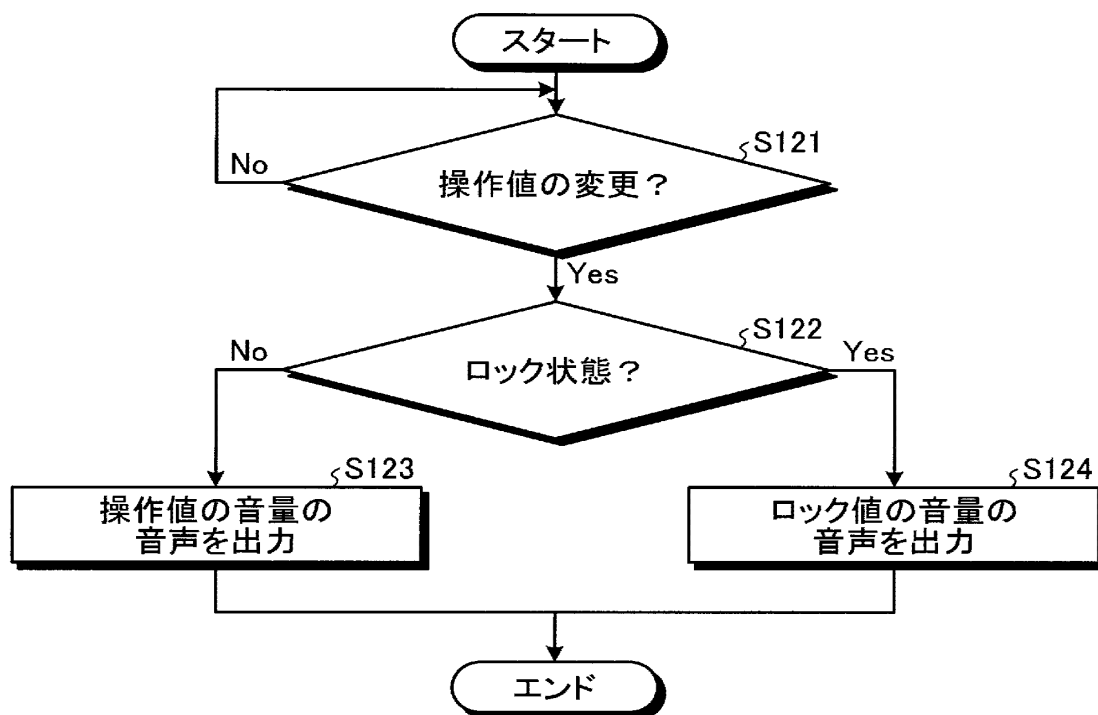
【図 2】



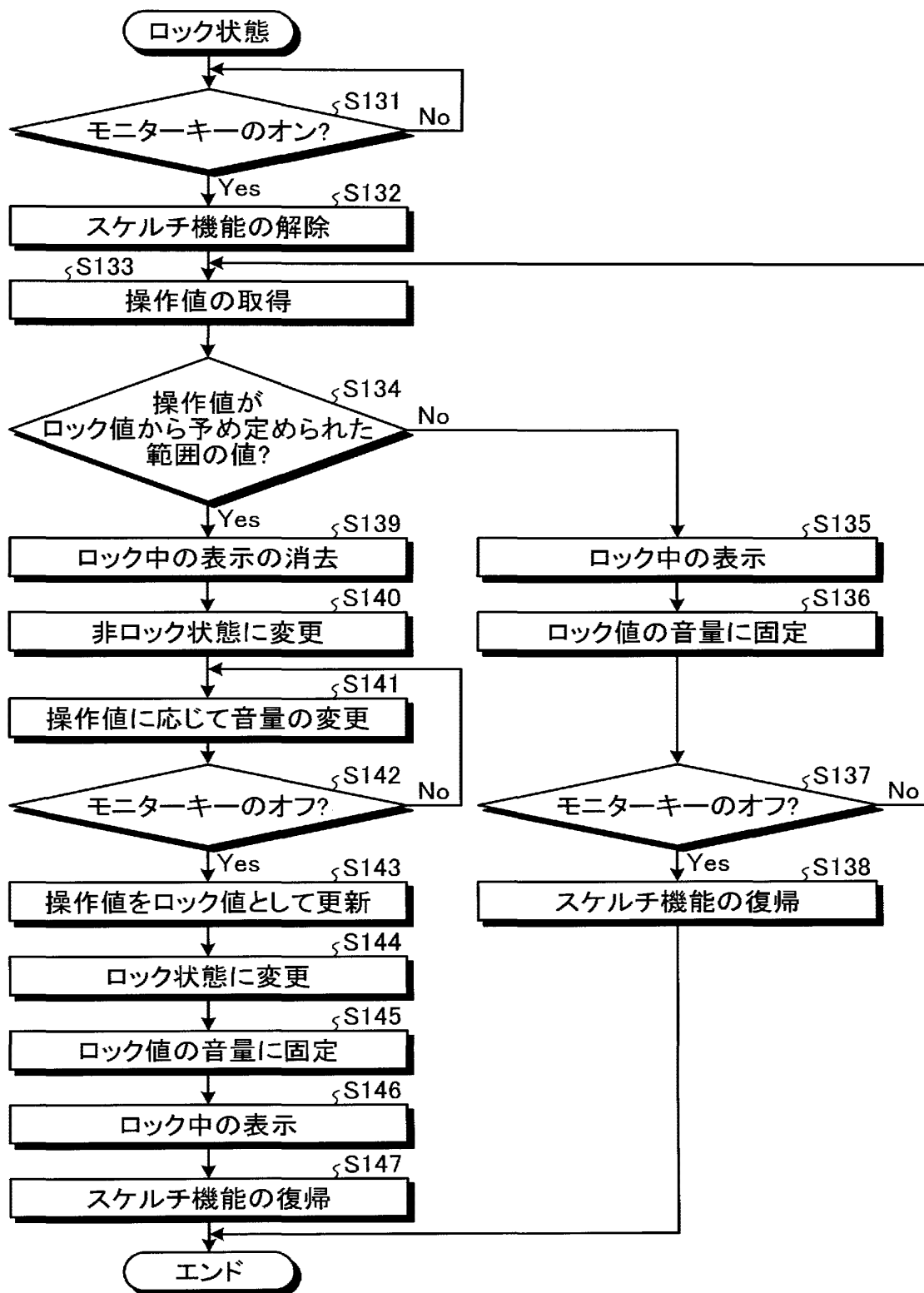
【図 3】



【図 4】



【図5】



出願人履歴

3 0 8 0 3 6 4 0 2

20110810

名称変更

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US

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PUBLICATION NOTICE



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CLEVELAND, OH 44114

EXAMINER

ISLAM, MOHAMMAD K

ART UNIT

PAPER NUMBER

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DATE MAILED: 07/06/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US	7787

TITLE OF INVENTION: RECEIVING APPARATUS AND CONTROL METHOD

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	10/06/2017

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US	7787

TITLE OF INVENTION: RECEIVING APPARATUS AND CONTROL METHOD

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	10/06/2017

EXAMINER	ART UNIT	CLASS-SUBCLASS
ISLAM, MOHAMMAD K	2655	381-109000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US	7787

23623 7590 07/06/2017
AMIN, TUROCY & WATSON, LLP
127 Public Square
57th Floor, Key Tower
CLEVELAND, OH 44114

EXAMINER

ISLAM, MOHAMMAD K

ART UNIT	PAPER NUMBER
----------	--------------

2655

DATE MAILED: 07/06/2017

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/366,261	Applicant(s) TACHIGI ET AL.	
	Examiner MOHAMMAD ISLAM	Art Unit 2655	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/1/2016.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-8. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. ☐ Notice of References Cited (PTO-892) | 5. ☐ Examiner's Amendment/Comment |
| 2. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 6. ☒ Examiner's Statement of Reasons for Allowance |
| 3. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 7. ☐ Other _____. |
| 4. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____. | |

/MOHAMMAD ISLAM/
Primary Examiner, Art Unit 2655

DETAILED ACTION

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119 (a)-(d). The certified copy has been filed in parent Application No. JP2015-238210, filed on 12/7/2015.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 12/1/2016 is being considered by the examiner.

Allowable Subject Matter

3. The following is an examiner's statement of reasons for allowance: There are no prior arts found to teach the limitation of independent claim 1 specifically for the limitation "a lock controller configured to switch between a non- locked state in which the volume level of the audio can be varied based on the operating value and a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value; and a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in the non- locked state and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in the locked state, wherein the lock controller is further configured to switch, when a predetermined operating part is turned on in the

locked state, the locked state to the non- locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off, and to update the lock value with the operating value and switch the non-locked state to the locked state when the predetermined operating part is turned off after having switched to the non-locked state.” and for claim 8, “a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in a non-locked state in which the volume level of the audio can be varied based on the operating value and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value, the control method comprising when a predetermined operating part is turned on in the locked state, switching the locked state to the non-locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off; and when the predetermined operating part is turned off after having switched to the non-locked state, updating the lock value with the operating value and switching the non- locked state to the locked state.”.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

4. The prior art made of record provided in the PTO Form 892 and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry of a **general nature** should be directed to the **Group receptionist whose telephone number is (571) 272-2600**.

Information regarding the STATUS of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or public PARI. Status information for unpublished applications is available through Private PAIR ONLY. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Any questions on access to PAIR, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Papers related to this application may be submitted to Group 2600 by facsimile transmission. Papers should be faxed to Group 2600 via the PTO 2600 Fax Center. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 O.G. 30 (November 15, 1989). The Fax Center number is (571) 273-8300.

For assistance in **Patent procedure, fees or general Patent questions** calls should be directed to the **Inventors Assistance Center (IAC) whose telephone number is 800-PTO-9199 or 800-786-9199**. Assistance is also available on the Internet at www.uspto.gov.

For requesting copies of Cited Art, Office Actions or the like, response to Status Letters, lost papers or files or General Problem solving, calls should be directed to the TC 2600 Customer Service Office whose telephone number is 571-272-2600 or by fax at 571-273-8300.

Any inquiry concerning **this communication or earlier communications from the examiner** should be directed to **Mohammad K Islam whose telephone number is (571) 270-5878**. The examiner does not have as detailed access as the previously listed numbers with regard to status or general problem solving. The examiner can normally be reached on Monday through Thursday from 8:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Davetta Goins can be reached on **(571)272-2957**.

/MOHAMMAD ISLAM/

Primary Examiner, Art Unit 2655

5.

Receipt date: 12/01/2016

15366261 - GAU: 2655

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	2016-12-01
	First Named Inventor	Tachigi et al
	Art Unit	
	Examiner Name	
	Attorney Docket Number	SAJVP127US

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
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FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	09-130173	JP		1997-05-16	SONY CORP		

If you wish to add additional Foreign Patent Document citation information please click the Add button

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NON-PATENT LITERATURE DOCUMENTS			Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2016-12-01
First Named Inventor	Tachigi et al
Art Unit	
Examiner Name	
Attorney Docket Number	SAJVP127US

1	
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If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/MOHAMMAD K ISLAM/	Date Considered	06/26/2017
--------------------	--------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		2016-12-01
First Named Inventor	Tachigi et al	
Art Unit		
Examiner Name		
Attorney Docket Number	SAJVP127US	

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Greg Turocy/	Date (YYYY-MM-DD)	2016-12-01
Name/Print	Gregory Turocy	Registration Number	36952

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Search Notes 	Application/Control No. 15366261	Applicant(s)/Patent Under Reexamination TACHIGI ET AL.
	Examiner MOHAMMAD ISLAM	Art Unit 2655

CPC- SEARCHED		
Symbol	Date	Examiner
H04N21/26258 OR H04N21/41407 OR H04N21/42222 OR H04N21/4825 OR H04N21/8113 OR H04N21/233 OR H04N21/4222 OR H04N21/42224 OR H04N21/4227 OR H04N21/42684 OR H04N21/431 OR H04N21/4312 OR H04N21/4333 OR G0	6/26/2017	MI

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

SEARCH NOTES		
Search Notes	Date	Examiner
H04N21/26258 OR H04N21/41407 OR H04N21/42222 OR H04N21/4825 OR H04N21/8113 OR H04N21/233 OR H04N21/4222 OR H04N21/42224 OR H04N21/4227 OR H04N21/42684 OR H04N21/431 OR H04N21/4312 OR H04N21/4333 OR G0	6/26/2017	MI
East, IPQ and inventor search	6/26/2017	MI

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	See PG-PUB text print out	6/26/2017	MI

	/MOHAMMAD ISLAM/ Primary Examiner.Art Unit 2655
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	15	((("TACHI GI") near3 ("Kazuomi"))).INV.	EPO; JPO; DERWENT	OR	OFF	2017/06/26 09:07
L3	6	((("TACHI GI") near3 ("Kazuomi"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/26 09:07
L4	6	((("KUROIWA") near3 ("Kanji"))).INV.	EPO; JPO; DERWENT	OR	OFF	2017/06/26 09:07
L5	1166	((("NAKAMURA") near3 ("Hiroshi"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/26 09:07
L6	1166	((("NAKAMURA") near3 ("Hiroshi"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/06/26 09:07
L7	0	controller same locked state same volume level	USPAT	ADJ	OFF	2017/06/26 09:09
L8	4184	controller same state same volume	USPAT	ADJ	OFF	2017/06/26 09:10
L9	258	8 AND ((H04N21/26258 OR H04N21/41407 OR H04N21/42222 OR H04N21/4825 OR H04N21/8113 OR H04N21/233 OR H04N21/4222 OR H04N21/42224 OR H04N21/4227 OR H04N21/42684 OR H04N21/431 OR H04N21/4312 OR H04N21/4333 OR G06F3/0665 OR G06F3/165).CPC.)	USPAT	ADJ	OFF	2017/06/26 09:15
L11	0	9 and (operation value same lock value)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2017/06/26 09:18
L12	0	9 and (operation value or lock value)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2017/06/26 09:19
L13	0	9 and (operat\$3 value or lock value)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	OFF	2017/06/26 09:19

EAST Search History (Interference)

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	63	"20170161013" "20140354576" "20080249643" "8843222" "2782254" "9448720" "20150153946" "4232393" "5335365" "7729461" "20080152055" "2008005853" "2378666" "7425874" "20080012647"	USPAT	OR	OFF	2017/06/26 09:06
L10	0	an audio output unit configured to output audio corresponding to an audio signal,a volume operating unit configured to output an operating value indicating a volume level of the audio according to a user operation, a lock controller configured to switch between a non-locked state in which the volume level of the audio can be varied based on the operating value and a locked state in which the volume level of the audio is fixed by a constant lock value for the operating value, and a volume controller configured to cause the audio output unit to output the audio having a volume level corresponding to the operating value in the non-locked state and to cause the audio output unit to output the audio having a volume level corresponding to the lock value in the locked state, wherein the lock controller is further configured to switch, when a predetermined operating part is turned on in the locked state, the locked state to the non- locked state for a period of time that starts when the operating value becomes a value that falls within a predetermined range based on the lock value and ends when the predetermined operating part is turned off, and to update the lock value with the operating value and switch the non-locked state to the locked state when the predetermined operating part is turned off after having switched to the non-locked "state.com"	USPAT	ADJ	OFF	2017/06/26 09:17

6/ 26/ 2017 9:38:51 AM

C:\ Users\ mislam\ Documents\ EAST\ Workspaces\ 15366261 receiving apparatus lock state.wsp

Issue Classification 	Application/Control No. 15366261	Applicant(s)/Patent Under Reexamination TACHIGI ET AL.	
	Examiner MOHAMMAD ISLAM	Art Unit 2655	

CPC						
Symbol					Type	Version
G06F		3		165	F	2013-01-01
H04R		3		007	I	2013-01-01
H04R		2430		01	A	2013-01-01

CPC Combination Sets						
Symbol			Type	Set	Ranking	Version

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 8	
/MOHAMMAD ISLAM/ Primary Examiner.Art Unit 2655 (Primary Examiner) _____ (Date) _____		06/26/2017 O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification 	Application/Control No. 15366261	Applicant(s)/Patent Under Reexamination TACHIGI ET AL.	
	Examiner MOHAMMAD ISLAM	Art Unit 2655	

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION											
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED						
CROSS REFERENCE(S)																	
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																

NONE		Total Claims Allowed:	
		8	
(Assistant Examiner)	(Date)		
/MOHAMMAD ISLAM/ Primary Examiner. Art Unit 2655	06/26/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US	7787
7590 07/14/2017 AMIN, TUROCY & WATSON, LLP 127 Public Square 57th Floor, Key Tower CLEVELAND, OH 44114			EXAMINER ISLAM, MOHAMMAD K	
			ART UNIT 2655	PAPER NUMBER

DATE MAILED: 07/14/2017

PRIORITY ACKNOWLEDGMENT

- ☒ 1. Receipt is acknowledged of priority papers submitted under 35 U.S.C. 119. The papers have been placed of record in the file.
- ☐ 2. Applicant's claim for priority, based on papers filed in parent Application Number _____ submitted under 35 U.S.C. 119, is acknowledged.
- ☐ 3. The priority papers, submitted _____, after payment of the issue fee are
- ☐ acknowledged
While the priority claim or certified copy filed will be placed in the file record, neither will be reviewed and the patent when published will not include the priority claim.
See 37 CFR 1.55(a)(2).
 - ☐ not acknowledged since the processing fee in 37 CFR 1.17(i) has not been received.
- ☐ 4. For utility and plant applications filed on or after November 29, 2000, the priority claim is not entered because the claim was not presented within the time limit required by 37 CFR 1.55(a)(1). A petition to accept a delayed claim for priority under 35 U.S.C. 119(a) - (d) or (f), or 365(a) may be filed. See 37 CFR 1.55(c) and MPEP 201.14(a).

Quang Nguyen, for

571-272-4200 or 1-888-786-0101
Application Assistance Unit
Office of Data Management

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
15366261	01-Dec-2016	Kazuomi Tachigi	SAJVP127US	7787

TITLE OF INVENTION :

RECEIVING APPARATUS AND CONTROL METHOD

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Regular Undiscounted	Utility under 35 USC 111(a)	2655	109000	MOHAMMAD ISLAM
Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
\$960	\$0	\$960	06-Oct-2017	\$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
23623 AMIN, TUROCY & WATSON, LLP 127 Public Square 57th Floor, Key Tower CLEVELAND OH 44114 UNITED STATES 216-696-8730 ~~doctet@thepatentattorneys.com~~	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status**Change in Entity Status**

- Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.
Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
☐ If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.
- ☐ Applicant asserting small entity status. See 37 CFR 1.27.
Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
- ☒ Applicant changing to regular undiscounted fee status.
Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:☒ Issue Fee☐ I authorize USPTO to apply my previously paid issue fee to the current fees due☐ Publication Fee☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____☐ Advance Order - # of copies _____

If **in addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency or credit any overpayment, to Deposit Account Number 50-1063.

☒ The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed**NOTE: If no name is listed, no name will be printed**

For printing on the patent front page, list to be displayed as entered

1. AMIN, TUROCY & WATSON LLP

2.

3.

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
JVC KENWOOD Corporation	Kanagawa		japan	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Greg Turocy/	Date	09-26-2017
Name	Gregory Turocy	Registration Number	36952

Electronic Patent Application Fee Transmittal				
Application Number:		15366261		
Filing Date:		01-Dec-2016		
Title of Invention:		RECEIVING APPARATUS AND CONTROL METHOD		
First Named Inventor/Applicant Name:		Kazuomi Tachigi		
Filer:		Gregory Turocy/Rebecca Veri		
Attorney Docket Number:		SAJVP127US		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPL ISSUE FEE	1501	1	960	960
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				960

Electronic Acknowledgement Receipt	
EFS ID:	30473411
Application Number:	15366261
International Application Number:	
Confirmation Number:	7787
Title of Invention:	RECEIVING APPARATUS AND CONTROL METHOD
First Named Inventor/Applicant Name:	Kazuomi Tachigi
Customer Number:	23623
Filer:	Gregory Turocy/Rebecca Veri
Filer Authorized By:	Gregory Turocy
Attorney Docket Number:	SAJVP127US
Receipt Date:	26-SEP-2017
Filing Date:	01-DEC-2016
Time Stamp:	12:16:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$960
RAM confirmation Number	092617INTEFSW12163300
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Web85b.pdf	46237	no	2
			b2f6a51c22499938b262d6b52b1e037afd3d75f7		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32318	no	2
			6c59dbf372e3133571f78336ebf5ec17cb3e02ef		
Warnings:					
Information:					
Total Files Size (in bytes):			78555		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	10/31/2017	9804819	SAJVP127US	7787

23623 7590 10/11/2017
AMIN, TUROCY & WATSON, LLP
127 Public Square
57th Floor, Key Tower
CLEVELAND, OH 44114

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Kazuomi Tachigi, Yokohama-shi, JAPAN;
JVC KENWOOD Corporation, Yokohama-shi, JAPAN;
Kanji Kuroiwa, Yokohama-shi, JAPAN;
Hiroshi Nakamura, Yokohama-shi, JAPAN;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
15/366,261	12/01/2016

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: **182086**
- OR
- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

- ☒ The address associated with the above-mentioned Customer Number

OR

- ☐ The address associated with Customer Number:

OR

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Address

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State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box)

SOUNDCLEAR TECHNOLOGIES LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Y. Lu

Date (Optional)

Name

Y. Lu

Title

Authorized Signatory, SOUNDCLEAR TECHNOLOGIES LLC

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

- ☒ Total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 3 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re U.S. Patent: 9,804,819	)
	)
Issued: August 23, 2017	)
	)
U.S. Application No. 15/366,261	)
	)
Filing Date: December 1, 2016	)
	)
Attorney Docket No.: 20039.001-B	)
	)
Customer No.: 182086	)

Title: **RECEIVING APPARATUS AND CONTROL METHOD**

Papers filed herewith on: March 6, 2024

1. Certificate of Correction (PTO/SB/44)
2. Additional Sheets Containing Explanation of Circumstances Establishing Good Faith for Certificate of Correction Pursuant to 37 C.F.R. § 1.323

Applicants respectfully attach a Certificate of Correction for this case and request that the corrections therein be made. The typographical error noted for the above-identified patent appears to be an applicant mistake, thus the required fee is submitted with this request. The requested correction does not change the scope of the claims, nor does it constitute new matter.

COMMISSIONER OF PATENTS

Receipt is hereby acknowledged of the papers filed as indicated in connection with the above-identified case.



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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 15/366,261	RECEIPT DATE / TIME 03/06/2024 02:48:07 PM Z ET	ATTORNEY DOCKET # SAJVP127US
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Title of Invention

RECEIVING APPARATUS AND CONTROL METHOD

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	9804819
CONFIRMATION #	7787	FILED BY	Kevin Sprenger
PATENT CENTER #	64574154	FILING DATE	12/01/2016
CUSTOMER #	23623	FIRST NAMED INVENTOR	Kazuomi Tachigi
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 4

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
3.6.2024_PTO-SB-44_9804819.pdf	2	Request for Certificate of Correction	180 KB
3.6.2024_POA_9804819.pdf	1	Power of Attorney	607 KB
3.6.2024_AdditionalInformation_9804819-LET..docx	2	Miscellaneous Incoming Letter	28 KB
Warning: All artifacts (SmartArt, Drawings, Charts, etc) have been replaced with images. Bookmarks were found and have been removed.			
3.6.2024_CoverSheet_9804819-TRAN.LET.docx	1	Transmittal Letter	15 KB

Warning: Bookmarks were found and have been removed.

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
3.6.2024_PTO-SB-44_9804819.pdf	AFA71BB58F6B62AFF8F4BFD91248B418E5DA19BEB1849A3 613057AED3DCB6D91DDBA390E5DAC13CA29F711F12F85F38 4B8E10DCB7B174596B0E439BD1EE6086
3.6.2024_POA_9804819.pdf	845186F1D841B170421098F3A1D34DCA5F632BDA357130094E 1F2B27DB91EBEABC8394833262F3DB48CC0E4B29994F6BB5 A8631F69DEE3EC12CCE853AF1E64F2
3.6.2024_AdditionalInformation_9804819-LET..docx	79E7C4B55AA38BF49E3D57910D8E721E8E4F7E1ED7A40CFE 170A9C5D7988332A3F9754BC7AEEDFF79C2CD92951539AE81 00D68E17D99108A0883E828B3809534
3.6.2024_CoverSheet_9804819-TRAN.LET.docx	C458505ADFA8C0CA7AF4E4D3487C90A0633657EB01932043D 983FE730C41B19A6240500B31C78BFA5F551C237C3B1ADA90 BFB323355D79830EF87F82466981F9

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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ELECTRONIC PAYMENT RECEIPT

APPLICATION # 15/366,261	RECEIPT DATE / TIME 03/06/2024 02:48:07 PM Z ET	ATTORNEY DOCKET # SAJVP127US
------------------------------------	---	--

Title of Invention

RECEIVING APPARATUS AND CONTROL METHOD

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	9804819
CONFIRMATION #	7787	FILED BY	Kevin Sprenger
PATENT CENTER #	64574154	AUTHORIZED BY	-
CUSTOMER #	23623	FILING DATE	12/01/2016
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Kazuomi Tachigi

Payment Information

PAYMENT METHOD CARD / 4851	PAYMENT TRANSACTION ID E202436E51305000	PAYMENT AUTHORIZED BY Kevin Sprenger
--------------------------------------	---	--

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1811	CERTIFICATE OF CORRECTION	160.00	1	160.00
TOTAL AMOUNT:				\$160.00

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage

submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**Page 1 of 1

PATENT NO. : 9,804,819 B2

APPLICATION NO.: 15/366,261

ISSUE DATE : 10/31/2017

INVENTOR(S) : Kazuomi Tachigi, Kanji Kuroiwa, Hiroshi Nakamura

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 12:

Line 26 replacement "the lock value" with "a lock value"

MAILING ADDRESS OF SENDER (Please do not use Customer Number below):

Daignault Iyer, LLP
8618 Westwood Center Drive, Suite 150
Vienna, VA 22182

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0033. Public burden for this form is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections, or an issued patent, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: U.S. Patent No. 9,804,819

**ADDITIONAL SHEETS CONTAINING EXPLANATION OF CIRCUMSTANCES
ESTABLISHING GOOD FAITH FOR CERTIFICATE OF CORRECTION PURSUANT
TO 37 C.F.R. § 1.323**

Commissioner for Patents
Office of Data Management Attention: Certificates of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

By way of this request pursuant to 37 C.F.R. § 1.323, SoundClear Technologies LLC (“SoundClear”) seeks a Certificate of Correction for U.S. Patent No. 9,804,819 (“the ’819 patent”). SoundClear certifies that this request seeks to correct a typographical mistake by the Applicant (JVC Kenwood Corporation) that occurred in good faith. The proposed correction does not change the scope of the claims or constitute new matter. Consistent with 35 U.S.C. § 255, SoundClear hereby provides the following explanation of circumstances to establish that the mistake occurred in good faith.

The predicate U.S. utility application of the ’819 patent (U.S. Application No. 15/366,261 (“the ’261 application”)) was filed on December 1, 2016. Unbeknownst to the Applicant, claim 8 contained a typographical error at the time the ’261 application was filed. The ’261 application was allowed on July 6, 2017 (without any prior Office Actions from the Examiner), and it issued as the ’819 patent on October 31, 2017. Hence, by Applicant’s mistake, claim 8 issued with the same typographical error that was contained in the original filing of the ’261 application.

U.S. Patent No. 9,804,819

SoundClear was subsequently assigned the '819 patent (in addition to other issued U.S. Patents) on September 19, 2023 by way of an assignment executed on that date and recorded with the USPTO on September 21, 2023. *See* USPTO Patent Reel/Frame No. 064988/0289. SoundClear recently became aware of the above-mentioned typographical error and is acting promptly to correct the mistake.

As set forth in the attached PTO/SB/44 form, SoundClear requests that claim 8 (at col. 12, line 26) be corrected to read “a lock value” instead of “the lock value.” This minor correction of a typographical error does not change the scope of claim 8 nor does it constitute new matter. As such, the requested correction complies with the legal requirements for such a correction, as set forth in M.P.E.P. § 1481, 37 C.F.R. § 1.323, and 35 U.S.C. § 255.

In view of the above, the undersigned requests that the identified corrections be accepted, and a Certificate of Correction be issued.

Respectfully submitted,

Dated: March 6, 2024

/Kevin H. Sprenger/

Kevin H. Sprenger (Reg. No. 79,466)

DAIGNAULT IYER LLP
8618 Westwood Center Drive, Suite 150
Vienna, VA 22182
703-712-1145
ksprenger@daignaultiyer.com

Attorney for Patent Owner SoundClear Technologies LLC



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US	7787
23623 7590 03/14/2024 AMIN, TUROCY & WATSON, LLP 200 Park Avenue Suite 300 Beachwood, OH 44122			EXAMINER ISLAM, MOHAMMAD K	
			ART UNIT	PAPER NUMBER
			2655	
			NOTIFICATION DATE	DELIVERY MODE
			03/14/2024	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@thepatentattorneys.com
hmckee@thepatentattorneys.com
rveri@thepatentattorneys.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Patent No.: 9804819
Issue Date: 10/31/2017
Appl. No.: 15/366,261
Filed: 12/01/2016

PART (A) RESPONSE FOR CERTIFICATES OF CORRECTION

This is a decision on the Certificate of Correction request filed 06 March 2024.

The request for issuance of Certificate of Correction for the above-identified correction(s) under the provisions of 37 CFR 1.322 and/or 1.323 is hereby:

(Check one)

☒ Approved ☐ Approved in Part ☐ Denied

Comments: _____

PART (B) PETITION UNDER 37 CFR 1.324 OR 37 CFR 1.48

☐ This is a decision on the petition filed _____ to correct inventorship under 37 CFR 1.324.

☐ This is a decision on the request under 37 CFR 1.48, petition filed _____. In view of the fact that the patent has already issued, the request under 37 CFR 1.48 has been treated as a petition to correct inventorship under 37 CFR 1.324.

The petition is hereby: ☐ Granted ☐ Dismissed

Comment: _____

The patented filed is being forwarded to Certificate of Corrections Branch for issuance of a certificate naming only the actual inventor or inventors.

/BHAVESH M MEHTA/
Supervisory Patent Examiner, Art Unit 2656
Technology Center 2600
Phone: (571)272-7453

Certificates of Correction Branch email: CustomerServiceCoC@uspto.gov CoC Central Phone Number: (703) 756-1814



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US

23623
AMIN, TUROCY & WATSON, LLP
200 Park Avenue
Suite 300
Beachwood, OH 44122

CONFIRMATION NO. 7787
IMPROPER CPOA LETTER



OC000000069703438

Date Mailed: 03/15/2024

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 03/06/2024. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney is from an assignee and the statement required by 37 CFR 3.73(c) has not been received or is incomplete.

/sleutchit/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

182086
DAIGNAULT IYER LLP
8618 WESTWOOD CENTER DRIVE
SUITE 150
VIENNA, VA 22182
UNITED STATES



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 15/366,261	RECEIPT DATE / TIME 03/20/2024 11:21:37 AM Z ET	ATTORNEY DOCKET # SAJVP127US
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Title of Invention

RECEIVING APPARATUS AND CONTROL METHOD

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	9804819
CONFIRMATION #	7787	FILED BY	Kevin Sprenger
PATENT CENTER #	64759947	FILING DATE	12/01/2016
CUSTOMER #	23623	FIRST NAMED INVENTOR	Kazuomi Tachigi
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	-

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
3.20.2024_3.73Statement_P TO-96_9804819.pdf	3	Assignee showing of ownership per 37 CFR 3.73	117 KB
3.6.2024_POA_9804819.pdf	1	Power of Attorney	607 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
3.20.2024_3.73Statement_PTO -96_9804819.pdf	672E3281CFC0C581A63BCCDE8C5B6C1AC5B9C57FD51CA38 CAD6413EEAB38A04781B31F1F45D7B085819C0648CB31C4C A9476CECFA4C77973812021DAAEC1F6A1
3.6.2024_POA_9804819.pdf	845186F1D841B170421098F3A1D34DCA5F632BDA357130094E 1F2B27DB91EBEABC8394833262F3DB48CC0E4B29994F6BB5

A8631F69DEE3EC12CCE853AF1E64F2

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: JVC Kenwood Corporation

Application No./Patent No.: 9,804,819 Filed/Issue Date: 10/31/2017

Titled: Receiving Apparatus and Control Method

SoundClear Technologies, LLC, a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Tachigi, Kazuomi; Kuroiwa, Kanji; Nakamura, Hiroshi To: JVC Kenwood Corporation

The document was recorded in the United States Patent and Trademark Office at
Reel 040483, Frame 0662, or for which a copy thereof is attached.

2. From: JVC Kenwood Corporation To: SoundClear Technologies, LLC

The document was recorded in the United States Patent and Trademark Office at
Reel 064988, Frame 0289, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Kevin H Sprenger/

Signature

Kevin H. Sprenger

Printed or Typed Name

03/20/2024

Date

79,466

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
15/366,261	12/01/2016

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:
- OR
- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

- ☒ The address associated with the above-mentioned Customer Number

OR

- ☐ The address associated with Customer Number:

OR

- ☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box)

SOUNDCLEAR TECHNOLOGIES LLC

- ☐ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☒ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature

Date (Optional)

Name

Y. Lu

Title

Authorized Signatory, SOUNDCLEAR TECHNOLOGIES LLC

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

- ☒ Total of 1 forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0035. Public burden for this form is estimated to average 3 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US

CONFIRMATION NO. 7787

POA ACCEPTANCE LETTER



OC000000070354297

182086
DAIGNAULT IYER LLP
8618 WESTWOOD CENTER DRIVE
SUITE 150
VIENNA, VA 22182

Date Mailed: 03/28/2024

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/20/2024.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mbeyene/



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/366,261	12/01/2016	Kazuomi Tachigi	SAJVP127US

CONFIRMATION NO. 7787

POWER OF ATTORNEY NOTICE



OC000000070354166

23623
AMIN, TUROCY & WATSON, LLP
200 Park Avenue
Suite 300
Beachwood, OH 44122

Date Mailed: 03/28/2024

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/20/2024.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/mbeyene/

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 9,804,819 B2
APPLICATION NO. : 15/366261
DATED : October 31, 2017
INVENTOR(S) : Kazuomi Tachigi, Kanji Kuroiwa and Hiroshi Nakamura

Page 1 of 1

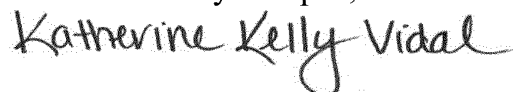
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims

Column 12:

Line 26 replace “the lock value” with “a lock value”

Signed and Sealed this
Second Day of April, 2024



Katherine Kelly Vidal
Director of the United States Patent and Trademark Office



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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Please find below and/or attached an Office communication concerning this application or proceeding.

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